

college AND UNIVERSITY **business**

SEPTEMBER 1955

Analyzing Institutional Expenditures

Should the Purchasing Agent Buy Foodstuffs?

Good Manners for Architect and Client

How to Buy Resilient Flooring

Effective Use of Space

PURCHASING OFFICIAL CHECKS FOODSTUFFS, UNIVERSITY OF MINNESOTA



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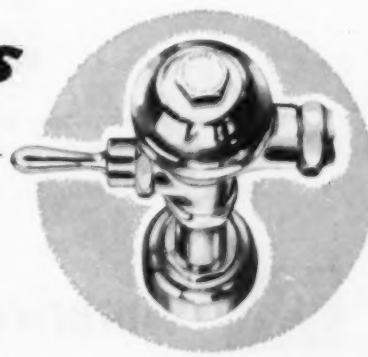
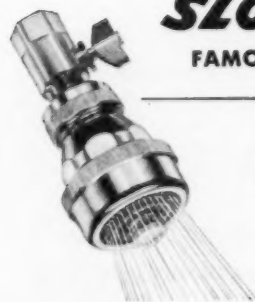
pleted are University Center (*upper right*), Library (*upper left*), Chapel and Christian Education, Science and Research, Law, Gymnasium, 6 Dormitories, 10 Faculty Family Apartment Buildings, Power and Central Heating Plant. All buildings will be of colonial design with skillfully planned interiors and inbuilt equipment of the highest rank. All will be equipped throughout with world-famous SLOAN *Flush VALVES*.

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Published monthly by The Nation's Schools Division, The Modern Hospital Publishing Co., Inc., 919 North Michigan, Chicago 11, Ill., U.S.A. Raymond P. Sloan, president; Stanley R. Clague, vice president and secretary; Everett W. Jones, vice president; Peter Ball, vice president; John P. McDermott, treasurer. Copyright © 1955, by The Nation's Schools Division, The Modern Hospital Publishing Co., Inc. Single copies, 50 cents. Acceptance under Section 34.64, P.L.&R., authorized. Published on the tenth of the month of the date of issue. Change of address should be sent 30 days in advance of publication date.

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Among the Authors



John Dale Russell

JOHN DALE RUSSELL, chancellor and executive secretary of the Board of Educational Finance for the State of New Mexico, begins on page 19 a series of articles on the analysis of institutional expenditures. This series will be particularly useful to business officers charged with responsibilities of budget preparation and administration. The analysis will deal with administrative and general purpose expenditures, plant operation and maintenance, library and instruction. Dr. Russell accepted the New Mexico appointment in 1952, leaving the position of assistant commissioner for higher education in the U.S. Office of Education, where he had served as director of the higher education division since July 1946. He is widely known for his work in conducting surveys of colleges and universities. From 1931 to 1936 he was professor of education at the University of Chicago, and for two years he served as secretary for the Commission on Colleges and Universities of the North Central Association of Colleges and Secondary Schools, which is responsible for accreditation of institutions in 20 midwestern states. During 1946, at the request of the United States Army, Dr. Russell was dean and academic adviser of Biarritz University in France. . . . JAMES I. DOI, budget analyst and assistant to Dr. Russell, is co-author of the series on the analysis of institutional expenditures.



Leslie P. Hardy

LESLIE P. HARDY, financial vice president of the University of Akron, describes on page 26 the factors involved in establishing a policy of contract painting for purposes of plant maintenance. At the present time he is coordinator of new construction, which includes a \$3 million development program, and is chairman of the committee on long-range planning. He has been in his present post since 1951; prior to that he served on the university staff as director of the evening studies program. In fact, he founded Community College, the noncredit branch of the evening session, in 1937. Mr. Hardy has been active in school and civic affairs and, while teaching in the Akron public schools, served as head of the Akron Teachers Association. A past president of the Summit County Tuberculosis and Health Association, he is currently serving as director of that organization. In 1951 he was recognized by citizens of Akron by being awarded that year's merit award for civic achievement.



John F. Rhilinger

JOHN F. RHILINGER, purchasing agent of Dartmouth College, presents comparisons of floor covering products on page 39. His analysis of floor coverings will be helpful to college buyers of such materials. Mr. Rhilinger joined the Dartmouth College staff as purchasing agent in 1953 after having been purchasing agent and traffic superintendent for the McElroy Manufacturing Company of Boston, makers of telegraphic equipment. During World War II he spent two years in the air force in the Southern Pacific area. When he has a little time, he likes to indulge in his hobbies of cooking and barbershop harmonizing.



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QUESTIONS AND ANSWERS

Meeting Teacher Shortage

Question: What immediate steps can be taken to offset the approaching shortage of teachers?—R.N., Idaho.

ANSWER: The following suggestions for immediate steps toward meeting the approaching shortage of college faculty members may be offered.

Colleges and universities by every possible means should encourage capable members of their senior classes to go on for graduate study and to prepare for college teaching. Some of the means that may be employed in extending such encouragement are:

1. Personal counseling by members of the faculty and administrative staff.
2. Provision of scholarship assistance by the institution from which the student graduates.
3. Assurance of assistance in placement on completion of a graduate degree.

Colleges and universities should use every possible resource to increase faculty salaries and to distribute increases in salaries in such a way that the most capable members of the faculty are rewarded as adequately as possible for their services. Improvement in the salaries of the capable members of the faculty should have two important results: It should retain more of the most able teachers in the profession, and it should enhance the attractiveness of college teaching to young people who are choosing a career.

Colleges and universities should begin to utilize the services of their capable faculty members more effectively than is now generally the custom. It seems highly probable that future enrollment increases will necessitate an increased student-faculty ratio in most institutions of higher education. Harmful effects of an increased student-faculty ratio may be avoided by certain adjustments, two of which are suggested here.

1. Faculty members normally spend a good bit of time and energy on routine tasks that might be handled effectively by persons of lesser scholarly competence. For example, provision of adequate clerical, typing and

secretarial service should free the time of instructors so that they can devote more of their energy to the actual teaching of students.

2. Much valuable instructional time and energy is now expended to little advantage in the teaching of very small class groups. In most institutions this situation is a result of the desire of the faculty to teach highly specialized courses, rather than because of any real demands of soundly constructed curriculums or any true interest of a considerable number of students. As enrollment pressures increase, the luxury of extremely small classes cannot be permitted in most colleges and universities. An institution can well afford to begin right now to review critically the list of courses offered, with the idea of spotting those that are not essential to any curriculum and for which small numbers of students register. When enrollments begin to bring pressures, it will be better to eliminate such courses than to employ substandard instructors to teach courses that are essential.

Institutions that can possibly find the resources for it should begin at once to "stockpile" capable faculty members. That is, as promising young scholars become available, colleges and universities with adequate resources should employ them, even though their services are not immediately needed in staffing the existing instructional and research program.

If you have a question on business or departmental administration that you would like to have answered, send your query to COLLEGE and UNIVERSITY BUSINESS, 919 North Michigan Avenue, Chicago 11, Ill. Questions will be forwarded to leaders in appropriate college and university fields for authoritative replies. Answers will be published in forthcoming issues. No answers will be handled through correspondence.

Far too many potential college instructors, failing to get an opportunity for a college faculty position on the completion of their graduate study, are drawn off into other occupations and never get into the teaching profession at all.—JOHN DALE RUSSELL, *chancellor, Board of Educational Finance, State of New Mexico.*

Fiber Glass Won't Crack

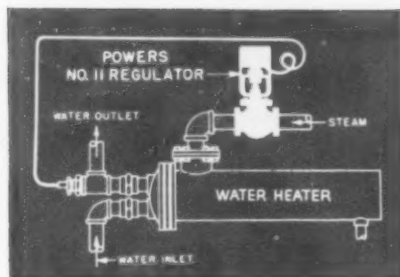
Question: We would appreciate any information you may have on fiber glass window drapery for institutional use. Especially, we would like to know how these draperies withstand heat from radiators. Is there any foundation to the report that they sometimes become brittle and crack?—J.S.R., Ont.

ANSWER: Reliable industry sources report that fiber glass window draperies do not become brittle and crack on exposure to heat. The fiber glass drapery material is somewhat more expensive than cloth, and harder to make up into curtains, it is reported. The material is easy to launder, requiring only a light wash, and drying as it hangs, with no ironing involved.—E.W.J.

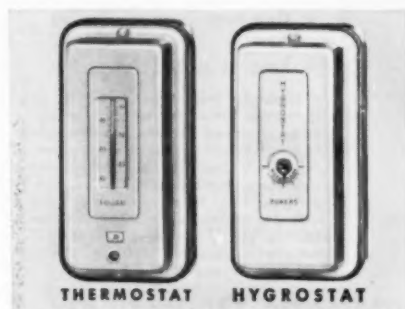
Custodial System

Question: Does the crew system for custodial cleaning work better than to have a custodial staff for each building?—M.S., Fla.

ANSWER: When buildings are used intensively during the day it is not satisfactory for a day janitor staff to attempt the cleaning operation. In the cleaning of classrooms and library reading rooms it is often necessary to clear the floor of chairs in order to do a satisfactory job. This type of cleaning is better performed when several men work together as a crew. The standard of performance is likely to vary in crew work so it is important that the crew be under the jurisdiction of a working supervisor assigned to it. In order to justify crew work a relatively large area assignment must be made for its operation. It is found desirable to have the crew work at night when academic buildings are least used and the cleaning can go on undisturbed.—LESTER RIES, *superintendent of buildings and grounds, Oberlin College.*



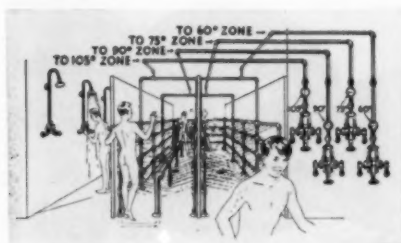
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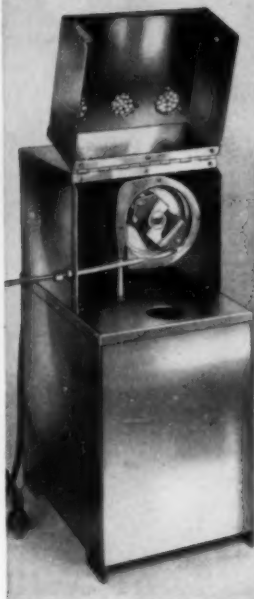
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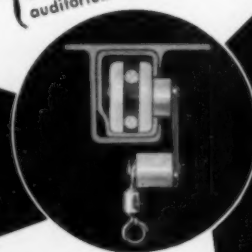
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Associate Architects: Mitchell & Ritchey
 Altenhof & Bown
General Contractor: George A. Fuller Company
Date of Adlake Window order: January 25, 1951

**North Central Home Office
 Prudential Insurance Company of America,
 Minneapolis, Minnesota**
Architects and Engineers: Magney, Tusler & Setter
General Contractor: C. F. Haglin & Son's Co.
Date of Adlake Window order: October 19, 1953

**Prudential Insurance Company of America,
 Chicago, Illinois**
Architects: Naess & Murphy
General Contractor: George A. Fuller Company
Date of Adlake Window order: November 12, 1953

Shelby County Hospital, Shelbyville, Kentucky
Architects: Nevin & Morgan
General Contractor: Otho Tapp
Date of Adlake Window order: June 24, 1952

City County Building, Detroit, Michigan
Architects: Harley, Ellington & Day
General Contractor: Bryant & Detwiler
Date of Adlake Window order: January 12, 1953

Freeport Motor Casualty Company, Freeport, Ill.
Engineers and Contractors: The Austin Company
Date of Adlake Window order: June 2, 1952

**East Unit, Baptist Memorial Hospital,
 Memphis, Tennessee**
Architects: Office of Walk C. Jones, Jr.
Consulting Architects: Samuel Hannaford & Sons
General Contractor: Harmon Construction Company
Date of Adlake Window order: June 23, 1953

Rockford Memorial Hospital, (right), Rockford, Ill.
Architects: Hubbard & Hyland
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General Contractor: Security Building Company
Date of Adlake Window order: December 26, 1951

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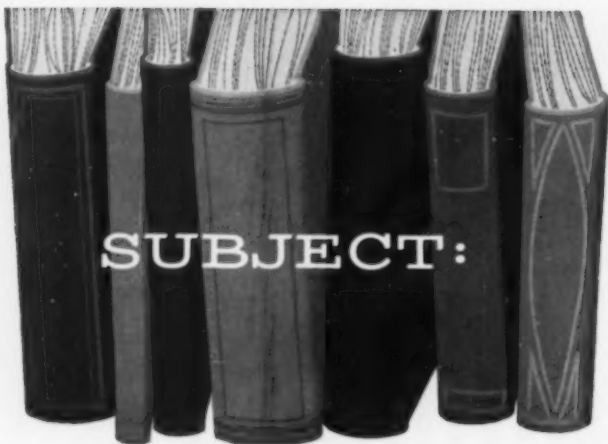
As with all Adlake products, these windows had to

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Tax Credit on Tuition Costs Could Make a Decisive Difference

PETER FRELINGHUYSEN Jr.
Republican, Fifth District, New Jersey



SERIOUS SHORTAGES EXIST TODAY IN PROFESSIONS and vocations that require a college education. In many cases, particularly in the natural sciences and engineering, these shortages have a direct impact on our national security.

Each year between 100,000 and 200,000 students who rank in the top fourth of their high school graduating class are unable, because of economic reasons, to continue their education by going to college. What can be done to draw this group into higher education? The United States needs their talents. We should all be interested in helping qualified individuals prepare for the professions in which we are critically short of trained manpower.

I have been keenly interested in this question for some time. A recent letter from a constituent stimulated me into making a specific legislative attack on the problem. My constituent suggested that taxpayers be entitled to deduct college tuition costs from their income tax. The suggestion appeared worth while. The government has employed a similar device to encourage industry to expand our defense base. Should we not do the same thing to strengthen our education base? Certainly the strength of a nation is directly related to that nation's ability to educate its citizens.

After studying the whole question and discussing specific proposals with qualified persons in the field of education, I decided to introduce a bill, H.R. 4568, which would provide individuals with a tax credit of 30 per cent of tuition costs.

It is surprising that college tuition costs have not already been made deductible. Education is at least as important to our society as certain types of business operations which are now deductible. Certain medical expenses also are deductible, which is proper, but clearly education should rank as high as medical needs.

Objections may be raised on grounds that passage of the bill would mean a revenue loss for the federal government at a time when we need every possible

source of funds to balance the budget. However, estimates are that the annual loss would be less than \$120 million. Furthermore, Congress always must weigh the immediate need for revenue against the justice, and perhaps valuable social consequences, of providing particular income tax deductions.

In the case of the numerous deductions now provided, Congress apparently felt that the loss of revenue was outweighed by other considerations. If we as a nation can procure more and better trained citizens by a tuition tax credit, these gains would be worth far more to us than the estimated loss in tax revenue.

Even if this bill becomes law, it would not solve entirely the problem of getting into college all capable students whose parents cannot afford their tuition. Many of the qualified 100,000 or 200,000 students unable to attend college each year might not be benefited by this tax credit proposal. Nonetheless, there is a large number of families, with incomes from \$5000 to \$15,000 annually, for whom such a tax credit could make a decisive difference. With such assistance these families could better afford the expense of providing their children with a college education.

The tax credit plan, therefore, is only a partial answer to the basic problem of providing an adequate education for qualified individuals. Serious shortages in certain professions may be met in part by this form of assistance. If our government, however, is to attack directly the continuing national problem of trained manpower, some form of assistance through scholarships may be desirable.

Many World War II and Korean War veterans have taken advantage of the G.I. education program. Perhaps a similar approach can be developed to provide assistance to talented young people today. In any event, we should recognize that we are faced with a serious shortage of trained manpower. This shortage easily could prove critical in America's prolonged and intensive conflict with Communist power.

LOOKING FORWARD

Is There a Better Way?

THE ANTICIPATED OVERFLOW ENROLLMENTS IN colleges and universities a few years hence have given some administrators a case of jitters. They view the coming influx with apprehension, as something akin to catastrophe, instead of the tremendous opportunity that it represents.

Successfully meeting the pressures ahead will not be accomplished by doing things the same old way. New ideas and new technics need to be developed. No doubt some campus sacred cows will take a beating in the process.

College presidents must insist on more effective utilization of staff. Faculty should submit to a realistic teaching schedule and not expect all classes to be held in the morning on Monday, Wednesday and Friday, for example. The public is going to demand greater productivity on the part of faculty and staff if the president doesn't. It is not reasonable to assume that the public will be willing to pick up the check unless convinced that productivity of staff and of funds is of high order.

Stewardship of funds involves careful administration and greater utilization of existing facilities as well as funds. No institution can afford the luxury of buildings and classrooms used only a third of the time. Yet, around the nation generally, that is the present situation. Before launching expensive building programs, it would be well for college executives to utilize more effectively the facilities already in existence.

Many colleges have made a shibboleth of small classes—"more personal relationship between faculty and students" has been the dominant theme. It is feared that this intimacy will be lost if the college gets too large. Some mistakenly equate small classes and quality of learning experience. As one college president puts it, however: "I would rather have my son in a class of 500 students a hundred feet away from a great teacher than exposed to a mediocre one in a small class grouped around a table." Perhaps some of the great teachers can be recruited from business and industry or from retired personnel from the armed services.

It's high time that some of the frills in the pattern of higher education be eliminated. Monumental buildings, ornate furnishings, and elaborate parks are likely to give way under the pressure of financing higher education.

Nothing on campus should be considered good enough just because it's always been done that way. In the interests of efficiency and economy, the college executive should continually ask himself: "Is there a better way?" A business-as-usual attitude will not solve the critical problems resulting from overflow enrollments.

Volume II

IT TOOK A LONG TIME TO FINISH THE JOB, BUT THE two-volume "Manual on College and University Business Administration" is now a publishing reality.

For years a committee of prominent college business officers worked on bringing together the best thinking and practice on various aspects of higher education administration. There were those in the field who have expressed the opinion the manual would never see the light of day. Much credit must be given to the committee of college business officers who pushed the project through to completion.

Reports from the American Council on Education, which published both volumes of the manual, indicate that Volume I has been a "best seller" for the council. Volume II is expected to be even more successful.

Authoritative literature in business administration of higher education has been very limited. Completion of Volumes I and II of "College and University Business Administration" is a substantial and significant contribution to the professional growth of college and university administrators. For college business executives the two books are "must" reading.

Be Specific

AN INCREASINGLY LARGER NUMBER OF CORPORATIONS, foundations and donors are insisting that college and university executives be specific in regard to financial needs.

Alfred P. Sloan Jr., chairman of General Motors Corporation, suggested at a conference held by the Council for Financial Aid to Education that "private universities and colleges should form committees of their trustees to inform business leaders not only of their needs but of the importance of the work being done by their institutions. And, when you ask business to give, ask it to support a definite program instead of just to give."

Beginning a series on finance

by **JOHN DALE RUSSELL**

Chancellor and Executive Secretary, Board of Educational Finance, State of New Mexico

and **JAMES I. DOI**

*Budget Analyst and Assistant to the Chancellor
Board of Educational Finance, State of New Mexico*

Analysis of Institutional Expenditures

A SERIES OF ARTICLES ON THE PROBLEMS involved in the analysis of expenditures of institutions of higher education begins with this issue. The articles will be illustrated by data taken from the records of the Board of Educational Finance of the State of New Mexico, pertaining to the institutions of higher education in that state. The first article (in two parts, this month and next) will deal with certain general considerations underlying the analysis of expenditures. Subsequent articles will deal with the analysis of various expenditure categories, such as administration and general, plant operation and maintenance, libraries and instruction.

Expenditure analysis is a technic for obtaining from raw financial data information that will enable administrative officials to draw sound conclusions and make intelligent decisions regarding the operation and status of the institution. The occasion in the annual fiscal cycle of a college or university when expenditure analysis perhaps is most useful is at the time of budget preparation and presentation. Information from expenditure analysis, in addition to its utility for internal institutional administration, also may be

an effective means for portraying to friends and critics of the institution its financial situation and the justification for its requests for support.

The first step in the analysis is the setting up of meaningful categories into which expenditures may be classified. The broad categories for expenditure classification already have been determined by national committees set up for that purpose. The second step is a careful and accurate financial accounting, so that every expenditure transaction is classified into the appropriate category or categories.

But no matter how well conceived the categories into which the expenditures are classified, and no matter

how carefully and accurately the financial accounting is done in accordance therewith, the raw data on number of dollars expended require some further analysis and interpretation to be most meaningful. In fact, entirely erroneous conclusions may be drawn from the raw data on expenditures unless they are accompanied by an appropriate analysis. As an example, Table 1 shows the expenditures in a state institution of higher education for each of the educational and general functions for 1951-52, and the budgeted amounts for the same functions for 1955-56.

Table 1 shows the stage of financial analysis at which the first two requi-

Table 1—Expenditures for 1951-52 for Each Educational and General Function in a State Institution of Higher Education and Those Budgeted for 1955-56

Function	Actual Expenditures	Budgeted for 1955-56
Administration and general	\$ 377,606	\$ 470,000
Instruction	1,591,077	1,995,332
Organized research	47,877	51,833
Extension	55,139	73,200
Libraries	153,087	173,235
Plant operation and maintenance	446,830	508,000
Total for educational and general purposes	\$2,671,616	\$3,271,600

sites have been cared for. Total gross expenditures have been classified, first into that major grouping known as "educational and general" and then into recognized subcategories according to function. It may be presumed also that the second requisite, careful and accurate financial accounting, has been met. What do data such as those presented in Table 1 mean to a person not familiar with the inner workings of the college or university? What would a member of the state legislature or the secretary of the state taxpayers association or any interested citizen conclude from a study of the figures in Table 1?

Probably the first observation would be that the institution is spending \$600,000 more in 1955-56 than it did four years previously for educational and general purposes. Increases in expenditures by a governmental agency are nearly always a cause for alarm among taxpaying citizens. A second observation from Table 1 is that expenditures for administration have increased more than \$92,000, or almost 25 per cent, in the four-year period. Such an increase in "unproductive overhead" must be viewed very critically. Similarly, the increase of more than \$60,000 for operation and maintenance of the physical plant would lead to a question as to whether this service is being conducted as efficiently as it formerly was.

An elected public official or a tax conscious citizen might draw the conclusion from a hasty examination of Table 1 that the institution is spending a lot of money unnecessarily—is, in fact, throwing money away like a drunken sailor. He might readily conclude that the tendency toward increases in expenditures should be checked when the next request for an appropriation is considered by the legislature and that further increases in appropriations should be denied. While such conclusions might be drawn honestly from Table 1, they might be very erroneous and harmful to the institution. Some further analysis is clearly needed to improve the interpretation of the data of Table 1.

Two methods are commonly used for analyzing institutional expenditures after they have been properly classified. The first is to find what percentage of the total expenditure for a broad category, such as educational and general, is devoted to each of its subclasses. The second method is to relate expenditures for some selected

function to some measure of the services produced. This second method yields data generally referred to as unit costs or unit expenditures.

Neither the percentage distribution method nor the unit cost method of analysis is completely satisfactory. The percentage distribution of expenditures is affected by many factors, such as the size of the institution and the adequacy of its financing. The results from the application of this technic have to be interpreted cautiously. The method is most useful when applied to data over a series of years in a single institution, particularly when the nature of the program and the volume of operations have been reasonably stable over the period covered in the analysis.

CRITICISM HAS BEEN SEVERE

The unit cost technic has been criticized extensively and severely. If the method were to be judged solely on the volume and the vehemence of the criticisms against it, probably no one in his right mind would ever use it. But, curiously, wise and prudent administrators continue to find advantages in the use of unit cost data. And people outside the official family of the institution almost invariably insist on translating its published financial data into some kind of unit terms, often not making such calculations intelligently or interpreting them correctly.

Perhaps the most valid criticism of the unit cost technic arises from the difficulty of identifying an appropriate unit of production or service. The unit cost commonly used is the student in attendance for a year or some recognized fraction of a year's service such as the credit hour. Some services main-

tained by institutions, however, are not related directly to the number of students in attendance.

A complete criticism of the two methods of analysis will not be attempted here. Although the shortcomings of the methods are recognized, both are still widely used and will probably continue to be used until some genius invents a better method of analysis. As an illustration of how the use of these two methods throws additional interpretive light on the statistics of dollars expended, Table 2 is presented showing the expenditure data of Table 1 expressed as percentages of totals and as amounts per student.

The very simple analysis presented in Table 2 changes completely the interpretation that might have been drawn from Table 1. Table 2 shows that during the four-year period the changes in the distribution of expenditures among the various functions have been slight. The biggest change in percentages has been in the direction of getting a larger proportion of total expenditures into the directly productive function of instruction. The institution is spending fewer dollars per student on almost every function in its 1955-56 budget than it did in 1951-52. The total educational and general expenditures, which seemed in Table 1 to have increased so greatly, are shown by Table 2 actually not to have kept pace with the increase in the number of students served. If the institution was financed on a reasonable basis in 1951-52, the conclusion from Table 2 must be that it needs more money, not less, than it has budgeted for 1955-56.

The "if" at the beginning of the preceding sentence immediately points

Table 2—Percentage of Total Educational and General Expenditures for Each Function, and Amount per Full-Time-Equivalent Student, in a State Institution of Higher Education for 1951-52, and Budgeted for 1955-56.

Function	Percentage of Total Educational and General Expenditures		Amount per Full-Time-Equivalent Student	
	1951-52 Actual	1955-56 Budgeted	1951-52 Actual	1955-56 Budgeted
Administration and general.....	14.1	14.4	\$117	\$114
Instruction.....	59.6	61.0	494	485
Organized research.....	1.8	1.6	15	13
Extension.....	2.1	2.2	17	18
Libraries.....	5.7	5.3	47	42
Plant operation and maintenance.....	16.7	15.5	139	123
Total educational and general.....	100.0	100.0	\$829	\$795

up the fact that the interpretation from the data from Table 2 is far from a final analysis. One immediately wants to ask what the experience of this institution has been in other years, or what the percentage distribution and amount per student are for other institutions in comparable years. To answer such questions requires information that is known as "normative data."

Any institution should be able to build its own normative data in a time series from its own financial records. But comparative data from other institutions are not readily available. Many privately controlled colleges and universities feel no obligation to publish their financial data. Even publicly controlled institutions often are reluctant to provide more than the most general sort of statistics on their expenditures. Even when financial statistics for other institutions are obtained, differences in classification and accounting practices may prevent the derivation of reliable data for comparative purposes. There is a crying need for reliable normative data on the expenditures of institutions of higher education. The possible sources of such data may be briefly reviewed and criticized.

DATA HAVE SHORTCOMINGS

The financial data on institutions of higher education published in the Biennial Surveys of the U.S. Office of Education are almost worthless for normative purposes. The greatest shortcoming of these data is the lack of uniformity in expenditure classification and accounting practices among the more than 1800 institutions that report financial information. The system used by the Office of Education to classify institutions into groups of supposedly similar character is far from satisfactory. Only gross totals for the U.S.A. as a whole or for regional grouping or for states are reported by the Office of Education.

Not since the 1939-40 Biennial Survey have data for individual institutions been reported, yet such statistics provide the raw material out of which it might be possible for an institutional official to construct normative data appropriate to his own college or university. The best feature of the U.S. Office of Education reports is the classification of educational and general expenditures into the standard, recognized major categories. Even these data must be used cautiously, and any

penetrating budgetary analysis requires much subclassification of the standard major categories.

The accrediting procedure adopted in 1935 by the North Central Association of Colleges and Secondary Schools is based largely on the use of normative data from the member institutions. These normative data cover not only finance but many other phases of institutional operations. At the time this procedure was adopted, some 20 years ago, it was confidently hoped and expected that the association would be able to make available data on institutional expenditures that would be useful for normative purposes outside the actual evaluation in the accrediting procedure. But almost immediately after the adoption of the procedure the member institutions, particularly the larger universities, flatly refused to provide financial reports in the detail that would have been most useful. As a result, the only normative data on expenditures of accredited institutions that have been made available through the North Central Association have related to the single item of expenditures per student for educational and general purposes.

The North Central Association's procedure also attempts to obtain uniformity in classification of expenditures and accounting procedures through a requirement that member institutions must keep their financial accounts and report their financial statistics according to the pattern set up by the National Committee on Standard Reports for Institutions of Higher Education. The enforcement of this provision is by no means rigorous.

DATA OUT OF DATE

The data reported by Floyd W. Reeves and his associates in "The Liberal Arts College," published in 1932, probably represent the largest body of strictly comparable expenditure data ever made available from a group of closely similar institutions of higher education. The statistics reported in that volume were based on data personally collected in surveys of 34 colleges of liberal arts related to the Methodist Episcopal Church. These data have been widely used by other institutions for comparative purposes. The data of that report, particularly those relating to unit costs, are now so old that they are not particularly useful for normative purposes, though

the generalizations regarding patterns of expenditure and relationships between expenditures and services still appear to hold true. Unfortunately, also, the book is out of print and not easily obtainable.

Certain of the central church boards concerned with higher education lately have begun to release a limited amount of financial data for their institutions. Published data from the Methodist and from the Southern Baptist institutions have particularly come to the attention of the authors. This is a development that should be encouraged, for in the past information on the finances of church related colleges has not been readily available. The compilations that have been published by the church boards thus far have not gone into much detail. The reports consist mainly of raw data without much interpretation or analysis. But a good beginning has been made toward the provision of some normative data from these groups of church related colleges.

DATA FOR PARTICIPANTS ONLY

Currently the "Big Ten" universities and the University of California are engaged in a large-scale, cooperative effort to develop various kinds of financial data that may be used for comparative purposes. Presumably the data from this study will be made available only to the participating universities. Even if the statistics from this important study were to be released for general use, their chief value would be to institutions of comparable size and complexity.

Since 1952 the New Mexico Board of Educational Finance annually has made extensive analyses of the operating budgets of the seven state controlled institutions of higher education in New Mexico. The board also has made annual studies of instructional salary costs per student-credit-hour for each instructional department of the seven institutions. The data from both kinds of studies have been used extensively by the board in reviewing and approving the institutions' annual operating budget estimates, and, during legislative years, in determining the amounts of appropriation to be requested from the state legislature. The institutions themselves have effectively used these same data in planning their budgets and in eliminating areas of uneconomical operation.

(To Be Continued Next Month)

**A foundation spokesman, scanning
the present financial landscape,
suggests paths leading toward**

Meeting Rising Operating Costs

F. EMERSON ANDREWS

Director of Studies in Philanthropy, Russell Sage Foundation



OUR FIELD OF PHILANTHROPY INCLUDES financing institutions of higher education of all types, from junior college to university, from theological seminary to technical institute, and whether under private auspices, religiously affiliated, or tax supported. We are, however, concentrating on income for current operations rather than endowment or plant expansion. No hopeful approach to that problem is barred or should be left unexplored, but I shall attempt here only to supply a few background facts with relation to the five key questions of the program.

1. *What trends in educational receipts and expenditures for current operation do recent figures show?*

Comprehensive data on income and expenditures for all colleges are available from the Office of Education. The meticulous care with which these data are presented should not deceive us, however, as to their total reliability. I have examined the schedules from individual colleges on which they are based and regret to report that some are carelessly prepared, and certain colleges fail to file at all in given years. Nevertheless these are the best data

From a paper presented to Discussion Group 20 at the 10th National Conference on Higher Education, sponsored by the Association for Higher Education, Chicago, 1955.

we have and are worth study. Table 1 presents this information in simplified form for the latest year now available, school year 1951-52, and includes a comparison with the similar report four years earlier.

We are dealing with a universe of 1832 institutions, of which about two-thirds are private, and one-third tax supported; but private and public have almost exactly the same numbers of students and instructors. Parenthetically, the 2.3 million students represent some loss from postwar highs; there were 2.6 million in 1948. However, the provisional figure for 1954-55 recently was announced at 2.5 million.

Receipts for current operations in 1951-52 totaled for the first time in any year more than \$2.5 billion (\$2,562 million). As expenditures for current operations for that year were the slightly lower amount of \$2,471 million it would appear that colleges as a whole were solvent, however different the situation may have been for some of them, or what such solvency may have cost in inadequate salaries, outmoded equipment, and other dangerous economies.

Indeed, the total picture may be less dark than we have sometimes assumed. The value of property for all these colleges, including plant, endowment and all nonexpendable funds, increased from \$6.5 billion in 1948 to \$9.7 bil-

lion in 1952—an increase of almost exactly 50 per cent in four years. Even with discount for inflationary factors, this is an encouraging growth.

But our interest is in income for current expenditure. Of the \$2.5 billion received, approximately 45 per cent came from government—federal, state and local. This varied from 23 per cent for private colleges as a group to 63 per cent for the tax supported colleges. Student fees accounted for 17 per cent of receipts for current operations—28 per cent in private colleges, a mere 8 per cent in public institutions. The student paid a larger share than in 1948, when his contribution was 15 per cent. Students also paid most of the 20 per cent for auxiliary enterprises, which include residence halls, dining halls, athletic events. Since this figure was 22 per cent in private colleges, one notes that student fees plus largely student-paid auxiliary enterprises account for exactly half the income of the private colleges for current operation.

Other sources were relatively minor. Private benefactions, while they totaled \$150 million, were only 6 per cent of these receipts. To this should be added the 4 per cent (\$113 million) from endowment earnings, which represent earlier private benefactions. The remaining 8 per cent is miscellaneous income, much of it from organized activities relating to instructional de-

**TABLE 1—FINANCIAL DATA FOR INSTITUTIONS OF HIGHER EDUCATION, SCHOOL YEAR 1951-52,
COMPARED WITH 1947-48**

Dollar figures in millions

Data for institutions of higher education	1951-1952						1947-1948	
	Private Institutions		Public Institutions		All Institutions		All Institutions	
	Number	Per cent of all institutions	Number	Per cent of all institutions	Number	Per cent of all institutions	Number	Per cent of all institutions
No. of inst.....	1,191	65	641	35	1,832	100	1,788	
Students (thousands)	1,146	50	1,156	50	2,302	100	2,616	
Faculty (thousands)	121	49	124	51	245	100	224	

Receipts for cur- rent operation:	Amount	Per cent of receipts	Amount	Per cent of receipts	Amount	Per cent of receipts	Amount	Per cent of receipts
Student fees.....	\$ 330	28	\$ 116	8	\$ 447	17	\$ 305	15
Fed. govt., vets.....	89	8	58	4	147	6	365	18
Fed. govt., other.....	141	12	163	12	304	12	161	8
State govts.....	36	3	576	42	611	24	352	17
Local govts.....	1	....	71	5	72	3	48	2
Endowment earnings.....	101	9	12	1	113	4	87	4
Priv. benefactions.....	124	10	26	2	150	6	91	5
Orig. activities ¹	57	5	79	6	136	5	93	5
Other educ. & gen. income.....	24	2	17	1	41	2	36	2
Aux. enterprises ²	264	22	246	18	510	20	465	23
For scholarships, fellowships, prizes.....	14	1	6	1	21	1	.....	....
Other current inc.....	6	....	6	....	11	....	24	1
TOTAL RECEIPTS.....	\$1,187	100	\$1,375	100	\$2,562	100	\$2,027	100

¹Related to instructional departments, as dairy products, etc.

²Residence and dining halls, intercollegiate athletics, printing and other industrial plants, etc.

Expenditures for current operation:	Amount	Per cent of expenditures	Amount	Per cent of expenditures	Amount	Per cent of expenditures	Amount	Per cent of expenditures
Admin. & gen. exp.....	\$ 135	12	\$ 99	7	\$ 234	10	\$ 172	9
Resident instr.....	369	32	454	35	823	33	658	35
Org. research.....	149	13	169	13	318	13	159	8
Extension.....	14	1	84	6	97	4	71	4
Libraries.....	29	2	31	2	61	2	45	2
Plant operation & maintenance.....	112	9	129	10	240	10	202	11
Org. activities ¹	60	5	87	7	148	6	85	5
Aux. enterprises ²	246	21	232	18	478	19	439	23
Scholarships, fellowships, prizes.....	31	3	8	1	39	2	53	3
Other current exp.....	20	2	12	1	33	1	.....	....
TOTAL EXPENDITURES.....	\$1,166	100	\$1,305	100	\$2,471	100	\$1,884	100

¹Related to instructional departments, as dairy products, etc.

²Residence and dining halls, intercollegiate athletics, printing and other industrial plants, etc.

Receipts for plant expansion:	Amount	Per cent of all institutions	Amount	Per cent of all institutions	Amount	Per cent of all institutions	Amount	Per cent of all institutions
Govt., all levels.....	\$ 15	8	\$ 166	92	\$ 182	100	.....	....
Priv. gifts and grants.....	63	88	9	12	72	100	.....	....
Other sources ¹	52	47	59	53	111	100	.....	....
TOTAL.....	\$ 130	36	\$ 235	64	\$ 365	100	\$ 365	....
Expenditures for plant expansion.....	149	36	260	64	409	100	\$ 306	....
Priv. gifts and grants for nonexpendable funds....	85	88	11	12	96	100	76	....
Property:								
Physical plant & plant funds.....	\$3,106	46	\$3,650	54	\$6,756	100	\$3,996	....
Endowment & other non- expendable funds ²	2,414	82	529	18	2,943	100	2,454	....
Student loan funds.....	31	67	16	33	47	100	44	....
TOTAL.....	\$5,551	57	\$4,195	43	\$9,746	100	\$6,494	....

¹Includes transfer from current funds and loans for plant expansion.

²Includes annuity funds.

SOURCE: Office of Education, U.S. Dept. of Health, Education & Welfare, Washington, D. C. Circulars 400 and 409, May and August 1954. Slight discrepancies in addition are due to rounding; percentages were derived from nonrounded figures.

partments, such as research, dairy products, and the like.

The expenditure picture merits more attention than we can give it now, for books may be balanced by decreasing expenditures as well as by increasing income. Certain items call for examination. Resident instruction accounts for 33 per cent of current operation expenditure—a little more than this in public institutions, somewhat less in private. Organized research took 13 per cent across the board. Administration and general expense was 10 per cent, as was also plant operation and maintenance. Auxiliary enterprises, at 19 per cent, showed a slight profit—\$32 million more received than spent. Organized activities were 6 per cent, showing a slight loss over receipts. Extension activities averaged 4 per cent, but were 6 per cent in public institutions, only 1 per cent in private. Libraries, scholarships, prizes and miscellaneous items totaled only 5 per cent.

2. *What can be done to develop thoughtful annual giving by private donors—alumni, parents, trustees and friends—and has the decrease of the wealthy donor been exaggerated?*

Private donors are the mainstay of philanthropy. The great publicity that has attended the recent rise in corporation giving and the newspaper attention sometimes given to grants by foundations should not mislead us as to proportions.

In "Philanthropic Giving"¹ I estimated for a recent year the receipts of all private philanthropy in the United States in terms of this proportional dollar: contributions from individuals, 74 cents; income from capital, 14 cents; corporation contributions, 5 cents; charitable bequests, 4 cents; foundations, 3 cents. The proportions have not greatly changed. The living donor still accounts for about three-fourths of the total receipts of philanthropy.

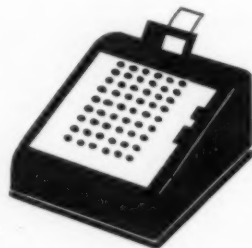
Colleges reported receiving \$150 million in private benefactions for current operation in 1951-52. It needs to be pointed out that they also reported \$21 million for scholarships and prizes, \$72 million in private gifts and grants for plant expansion, and \$96 million for "nonexpendable funds," presumably largely for endow-

ment. These items unfortunately do not separately show individual donors, bequests, corporations and foundations, and there is also reason to believe that not all gifts from these sources are here reflected; but the total of \$339 million is worth noting.

Alumni funds have been building up rapidly. In 1940 such funds received only \$2.5 million. In a more recent year, 1953, the American Alumni Council reports 302 alumni funds receiving a total of \$40 million, of which \$24 million came from donors other than alumni; the alumni themselves gave \$16 million, plus another \$16 million not credited to the fund. Such figures are obviously incomplete, but indicate healthy growth in these "living endowments."

Alumni funds are important for two additional reasons. Corporations, before deciding upon their college gifts, often use alumni giving as one important measure of the effectiveness of a given college. General Electric's corporate alumnus plan, where the corporation will match up to \$1000 the contributions of its employees to their colleges, is a graphic illustration of this point. Second, bequests constitute a substantial portion of philanthropic income, and it is common experience that wills are made out in favor of those institutions that have been on the testator's list for regular charitable giving.

In addition to the importance of annual small gifts, it seems probable that some colleges have prematurely buried the large donor. It is not true that high incomes are no longer common, and while taxes at these levels



are substantial, gifts to colleges are now tax exempt up to 30 per cent of adjusted gross income. As to the survival of large incomes, consider these figures. In 1929, there were 39,000 persons with incomes of \$50,000 or more; in 1932, 7000; in 1941, 19,000; in 1951, 88,000.

After golden 1929 the big donors did nearly disappear in the depth of the depression. But in 1951, the latest year for which figures are available, incomes of \$50,000 or over were more than twice as numerous as in 1929 and, because of high tax rates and doubtless other reasons, giving in these brackets usually has been much more generous than in the 1920's.

3. *What is the fair share that corporations should be asked to assume and how can they most effectively give?*

Corporation giving to all charitable purposes has risen from the initial level of \$30 million a year in the late 1930's, when such gifts first became tax exempt, to a plateau of more than \$200 million every year since 1944, with a peak of \$398.6 million in 1952. In a Russell Sage Foundation survey² reflecting 1950 giving, it was found that 40 per cent of the sampled corporations gave no money to education in any form. Contributions of small corporations to education were nearly negligible; those of medium size gave substantially and often to the critical general expense budget of a college in their neighborhood; large companies concentrated their educational giving on research, with modest amounts for institutional aid, scholarships and fellowships. Education received 21 per cent of the total corporation giving.

If these percentages held for 1952's \$399 million, then in that year colleges may have received about \$67 million from corporations, distributed in somewhat this fashion: \$31 million for institutional aid; \$25 million for research; \$11 million for scholarships and fellowships. An additional \$18 million classified under education went to "American way" agencies, but little of this amount passed through college bursaries.

In the last several years the colleges, their statewide associations, the Council for Financial Aid to Education, and many corporation officials have been stressing corporate responsibilities in this area; comprehensive figures are not available, but the record has probably improved. The council recently reported on the 1953 giving of 367 companies, admittedly a somewhat biased sample since the questionnaire went to 1080 companies and

¹Andrews, F. Emerson: *Philanthropic Giving*. Russell Sage Foundation, New York, 1950, p. 73.

²Andrews, F. Emerson: *Corporation Giving*. Russell Sage Foundation, New York, 1952.

those failing to reply often may have had the poorer contribution records. But for the 367 respondents, charitable contributions represented from 0.9 to 2.9 per cent of net taxable income for the various asset groups, and 25 per cent of these contributions went to the field of education.

Currently two diverse factors are at work. Corporate recognition of its educational responsibilities is growing and should result in relatively more generous treatment to colleges. The excess profits tax has been removed, and this may reduce the giving of some corporations.

Dr. Millett reported "a good deal of sentiment" among colleges that not more than 15 or 20 per cent of educational income should come from corporations.³ This is a danger that seems somewhat remote.

4. *Can we expect significant help for operating expense funds from churches, communities or private foundations?*

Church bodies are increasingly recognizing financial responsibilities toward their church affiliated colleges. In some Protestant denominations an "educational Sunday" is scheduled each year, when college interests are stressed and collections in their behalf are taken. Variety is so great in the different denominations and faiths that we have no over-all statistics to present.

The community has been covered in earlier sections in the general sense of aid from local citizens and local business. As to the political community, local taxation accounted for 3 per cent of receipts for current operations of all colleges. This source of revenue was negligible for private institutions, but was \$71 million for public institutions. Nearly the whole amount went to municipal colleges and universities or junior colleges maintained primarily to serve local students.

Foundations have made many important contributions to higher education, but these have seldom been toward the current operating budget. In the first two decades of this century several of them contributed heavily toward college endowments, often on a matched grant basis, under the illusion that endowments could be built to a point where they would finance

³Millett, John D.: *Financing Higher Education in the United States*. Columbia University Press, New York, 1952, p. 459.

TABLE 2—CONTRIBUTIONS TO HIGHER EDUCATION FOR FEDERAL, STATE AND LOCAL GOVERNMENTS AT FOUR-YEAR PERIODS, 1940 TO 1952

Dollar figures in millions

School Year	Federal	State	Local	Total	Total Educational and General Income	
					Amount	Per Cent From Government
Ending						
1940	\$ 39	\$151	\$24	\$ 214	\$ 571	37
1944	308	175	27	510	864	59
1948	526 ^a	352	48	926	1,538	60
1952	451 ^b	611	72	1,134	2,021	56

^aIncludes \$354 million for veterans' education.

^bIncludes \$147 million for veterans' education.

SOURCE: Biennial Survey of Education, 1944-46, and 1946-48, and Circular 409, August 1954, U.S. Office of Education.

a high percentage of operating costs. But operating costs skyrocketed to more than \$2.5 billion, and now earnings from endowments accumulated from all sources cover only 4 per cent of those costs. As Dr. Millett pointed out, although endowment income of private institutions rose from \$59 million in 1930 to \$84 million in 1950, income per student dropped in the same period from \$122 in 1930 to \$76 in 1950.

All the foundations together have only between 3 and 4 cents of the philanthropic dollar to spend; in the perspective of present educational costs, foundations cannot contribute significantly through additions to endowment, and few of them any longer make that attempt. The present pattern includes supporting research projects within the universities, studies of higher education itself, scholarships and fellowships, or sometimes aid to a special department for a project of interest to the foundation. Grants in many of these fields have important results for education, but few of them contribute toward reducing operating deficits.

Some 5000 foundations now exist. They have a total endowment of perhaps \$4.9 billion, and an annual income approaching \$250 million. Education was a major interest with 48 per cent of the foundations in a recent sampling, but with their limited resources and special interests they are unlikely to contribute substantially to the tremendous operating budget of higher education. But no general statement holds true in this field of infinite variety. The numerous small foundations are substantially incorporated private donors, and many of them will give modest amounts for current needs.

5. *What share may government at all its levels properly assume?*

Table 2 presents data on government contributions to higher education at four-year intervals from 1940 through the school year ending in 1952. Comparison is made with total educational and general income, which corresponds with receipts for current operation after subtraction of auxiliary enterprises (a self-balancing item) and several other noneducational items.

Total governmental contributions have increased from \$214 million in 1940 to \$1,134 million in 1952, a more than fivefold increase. But in the same period educational and general income grew from half a billion to more than \$2 billion, so that percentage-wise the governmental share rose only from 37 per cent in 1940 to a maximum of 60 per cent in 1948, a peak year in payments in behalf of veterans.

Changes within the various levels of government are perhaps best expressed as percentages of total educational and general income for given years. In 1940 these relationships were: federal, 7 per cent; state, 26 per cent; local, 4 per cent. In 1952 they had become: federal, 22 per cent; state, 30 per cent; local, again 4 per cent. Only the federal contribution has shown a remarkable increase percentage-wise, and a portion of this (one-third of the 22 per cent) represents payments for veterans' education, an item that is rapidly decreasing.

An exploration of governmental contributions will involve at least two questions: Can the amounts be substantially increased from any level of government? Can this be done in ways that will preserve higher education's present independence, initiative and freedom to experiment?

Contract Painting

Is it economical?

LESLIE P. HARDY

Financial Vice President
University of Akron, Akron, Ohio

FOR A NUMBER OF YEARS IT WAS THE practice at the University of Akron to use maintenance staff employees during the summer months to do both exterior and interior painting. During the war years this institution, like many others, operated educational programs for the military and also an accelerated degree program on a 12 months' basis. This, together with the shortage of labor and materials caused by the war, left its effect on all campus buildings. As late as 1950 the painting program under the pre-war plan had not restored the buildings to proper appearance and protection.

A survey of the conditions of all campus buildings for both interior and exterior painting was made. A quick calculation showed that the painting schedule then in effect was losing at the rate of approximately one complete building per year. In our climate, with fumes from industrial acids and smoke, we planned to repaint building exteriors each four years and the interiors each five years. We also calculated the number of painting days when school was not in session and found that to meet the paint schedule for interiors only would require at least one-fourth of the maintenance staff, thereby causing neglect of other cleaning operations such as floors, walls, windows and offices. This also would cause cessation of most of the work on campus lawns and parking lots.

Our major problems were: (1) How could we catch up with our proposed painting schedule, and (2) how could we maintain the schedule in the future.

We decided to obtain bids on the cost of painting the exteriors of three

buildings and compare them with our own costs. Five bids from reputable contractors were received on each building. Fortunately the low bid on each building was by a different contractor. The work progressed simultaneously on the three buildings and in three weeks' time the work was completed under specifications drawn by the superintendent of buildings and grounds. In the meantime, our regular maintenance work was uninterrupted.

It first appeared that prices were higher for contract work, but an analysis of costs showed that materials prices, paint and brushes were the same as for our own painting. On labor we added to our payroll for comparative purposes the university's share of the cost of pensions ($8\frac{1}{3}$ per cent), vacation and sick leave costs from our experience, pro rata costs of ladders, scaffolding and dropcloths. We also calculated a nominal share of the liability insurance premium.

In the labor estimate we found that professional painters under supervision are more efficient with equipment and materials. This experience was sufficiently encouraging that during the next three seasons, 1952, 1953 and 1954, the remaining 17 buildings were painted. In 1956 we plan to start the cycle over again. We do not see the need for any exterior painting this year.

INTERIOR PAINTING, DECORATING

The maintenance department employs two full-time painters who devote all their time to interior work. Of course, this is insufficient for all work required and, here again, we find it efficient and economical to contract for certain buildings, especially classroom buildings, which are vacant at most only six weeks of the year. Winter and spring vacation periods usually provide the lowest bidding season and this accrues to our benefit. Interior painting during August is competitive with exterior work and usually is less advantageous in price.

All special work, such as small laboratories, offices and furniture refinishing, is handled by the campus painters. These conditions may not always prevail, but in the present economy it is favorable to our situation.

The University of Akron is representative of the medium sized institution with an enrollment of 2400 day students and 2900 evening students.

Its 20 buildings have approximately 384,000 square feet of floor space. It is located in an urban center of 300,000 population. There are well established and reputable contractors available who are eager to bid on university work.

COLORS IN KEEPING WITH DESIGN

Another feature of our interior painting program has been the additional care in the selection of colors for classrooms and offices. Students and faculty in commercial art classes have been helpful in selecting colors in keeping with the design and use of classroom buildings. We have done much to overcome the institutional tans and greens that prevailed for many years. At the present time selections are being made for painting the utility pipes in the chemical laboratories with other than traditional black.

The faculty and student body have been sufficiently responsive to encourage the continuance of this policy. At the outset of the program the superintendent of buildings and grounds and I attended paint clinics and became informed on the alkyd resins and the conditions under which one-coat work is satisfactory.

To be economical, it requires forward planning, the development of a regularized plan and policy in keeping with a consistent and fair relationship with the other allocations in the over-all budget of the institution. A plan under these conditions enables the maintenance program, including painting, to be on a current basis. To use an old phrase, "Plan your work, and work your plan."

Our current investigation is on the use of silicone materials for the protection of brick and stone exteriors. A recent caulking and pointing job, which cost approximately \$4000 on two buildings less than 10 years old, furnished the cause for this study. To the business office and the board of directors the cost approach is convincing, but we should not lose sight of other important factors that are related to well managed property, including exterior appearance and good housekeeping within the buildings and on the campus.

At the present rate of construction of college buildings and the apparent need for more expansion during the next 10 to 15 years, we cannot rely upon ivy alone to give the collegiate atmosphere for learning.



Symbolizing democratic spirit of a state university

CAROLINA STUDENT HOUSE

WILLIAM N. PATTERSON

Dean of Administration, University of South Carolina, Columbia

"THE CAROLINA STUDENT HOUSE will symbolize the democratic spirit of a great state university. It will be a place where every student will be equally welcome and in which every student will have an equal share; a place where students, faculty and alumni will meet each other socially and informally, and thereby promote the best traditions of loyalty to their university and to each other."

Thus Donald Russell, president of the University of South Carolina, de-

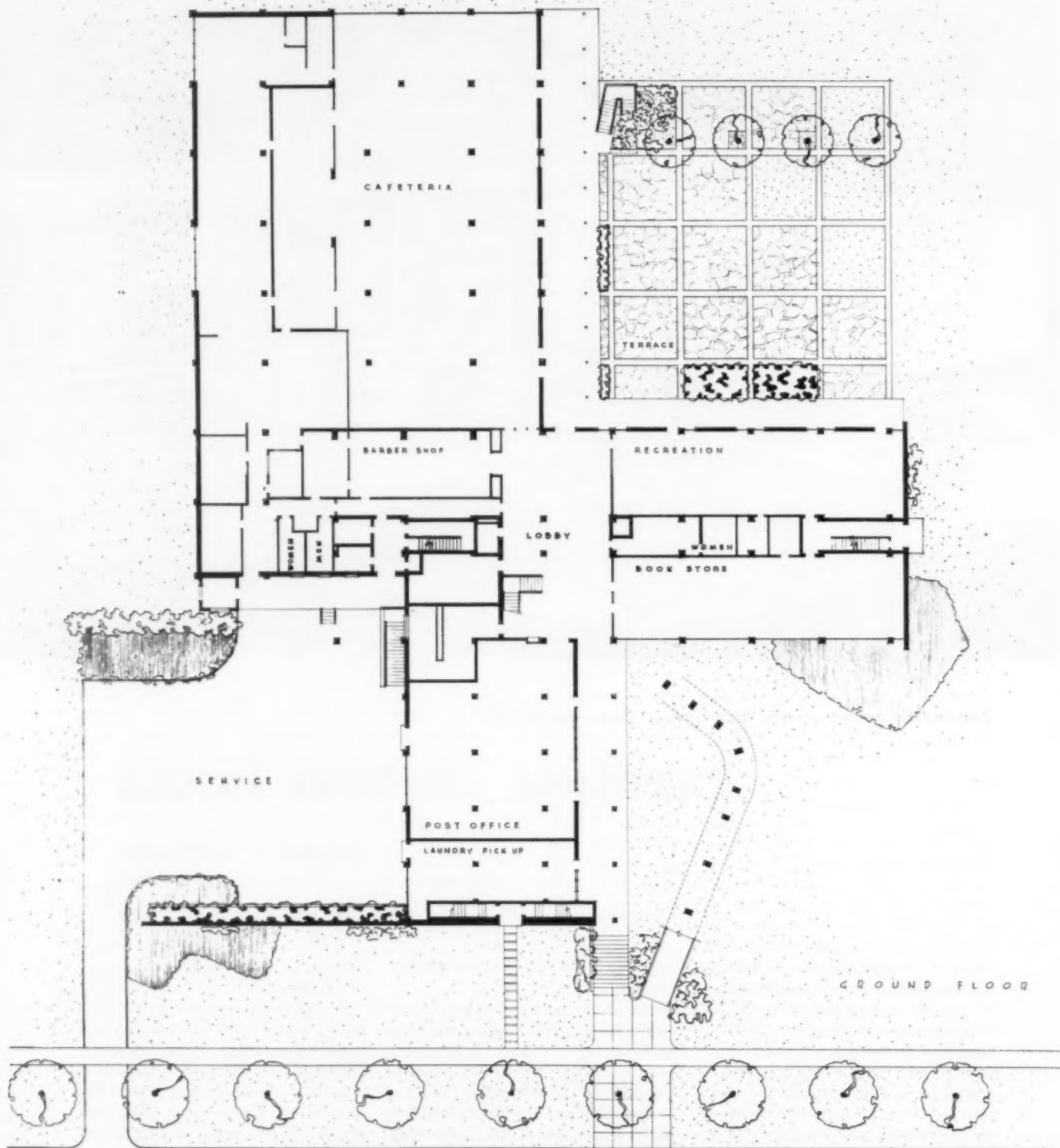
scribed a vision that is fast becoming a reality.

One of the principal objectives of a building program which includes a residence hall for men, another for women, a school of business administration, a fine arts building, and extensive additions to the school of education and school of engineering, all either under construction or recently completed, the Carolina Student House has been designed as a center for student activities and serv-

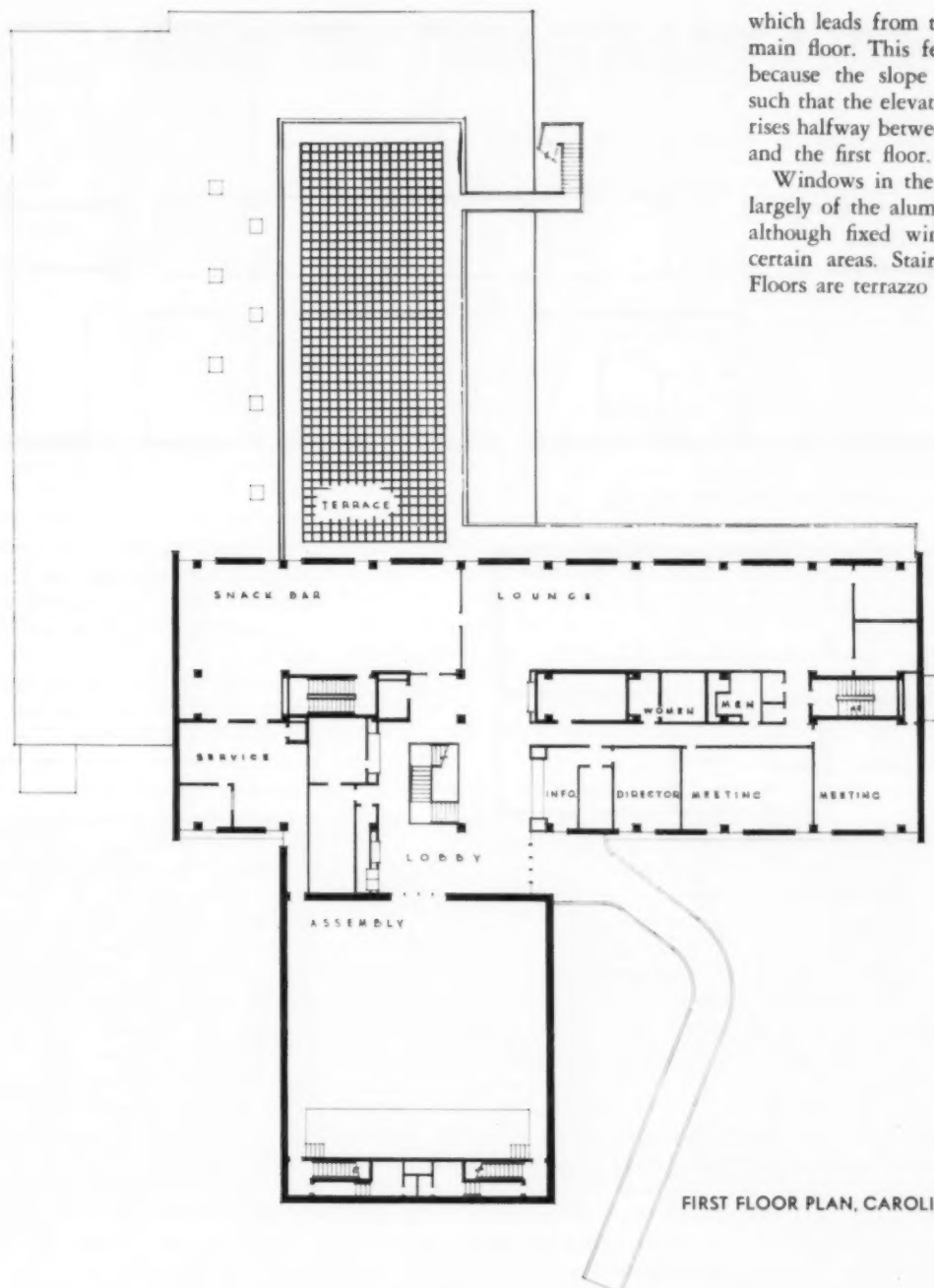
ices and as a meeting place for alumni and faculty.

In 1953 the board of trustees of the University of South Carolina designated Lyles, Bissert, Carlisle & Wolff, Columbia, S.C., architect-engineers, to plan the proposed student center. The terms of the agreement with this firm required a completely furnished and equipped building.

After seven months of research, and visits by the architects, administrative officials, and a student committee to



G R E E N C O U R T Y A R D



which leads from the sidewalk to the main floor. This feature was possible because the slope of the ground is such that the elevation of the sidewalk rises halfway between the ground floor and the first floor.

Windows in the student center are largely of the aluminum awning type, although fixed windows are used in certain areas. Stairways are concrete. Floors are terrazzo and vinyl tile. Sus-

activities centers on other college campuses, designs were developed suited to the special needs of the University of South Carolina.

The breakdown of the \$824,064 construction cost includes \$65,517 for electrical work, \$202,357 for plumbing, heating and air conditioning, and \$70,179 for kitchen and food service equipment. With the interior furnishings, the Carolina Student House is expected to cost \$1,075,000.

The structure is of reinforced concrete with exterior walls of rose col-

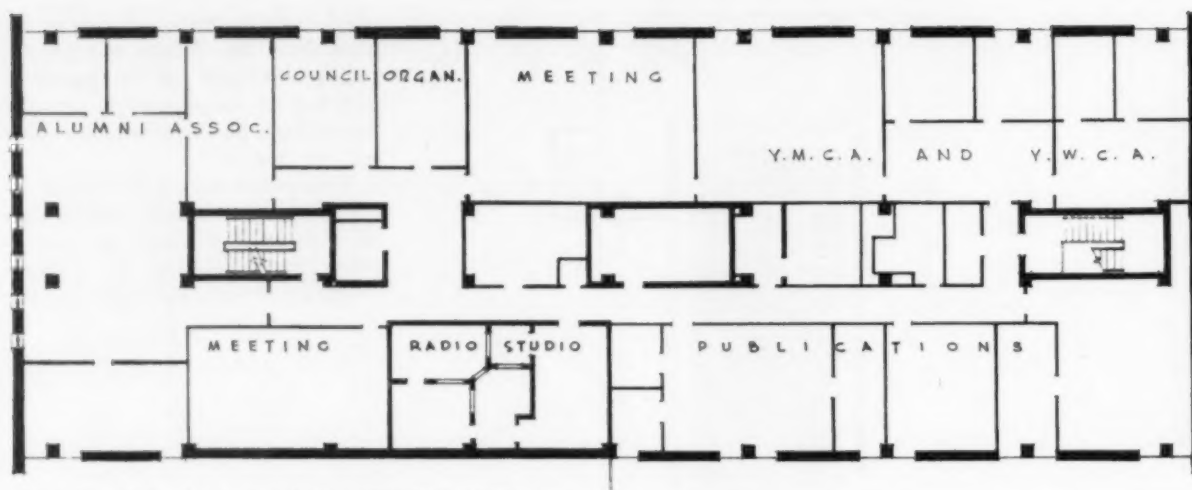
ored sand finish brick and limestone. Concrete structural members are exposed. Interior partitions are largely masonry except for the offices on the second floor. In these rooms, movable metal partitions were installed so that the re-allocation of space can be accomplished without difficulty. Materials and finishes were selected to obtain an economic structure and to keep maintenance cost to a minimum.

A distinctive feature of the building is a gracefully curved concrete ramp, designed to facilitate the flow of traffic,

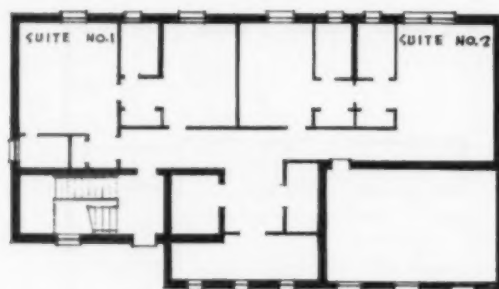
pendent acoustical tile ceilings are used throughout the building.

The building is heated and cooled by forced air through a single duct system, with high pressure steam supplied from a central heating plant. All areas except offices on the second floor are air-conditioned, and these spaces can be added to the air conditioning system at a later date. Separate temperature and dehumidifier controls are provided in the dining rooms.

A public address system with outlets in all public areas has three separate



SECOND FLOOR PLAN, CAROLINA STUDENT HOUSE



THIRD FLOOR PLAN

microphone connections in convenient locations. A built-in television antenna services a "television corner" in the student lounge. There is one passenger elevator.

The cafeteria, seating 684 persons, is so arranged that it can be divided into smaller dining rooms by folding doors. It has terrazzo floors and decorative wall finishes. The serving area adjoining the kitchen accommodates four lines to ensure rapid service since all eating facilities for faculty and students have been consolidated in this location. The kitchen, which can prepare 1800 meals at one time and serve a thousand meals an hour, also serves the university infirmary, housed in a near-by building. The cafeteria can be used for banquets, dances and large assemblies. Several doors lead directly from it to a long, wide porch and a paved terrace.

The assembly room is situated on the upper level leading directly from the concrete ramp. Its appointments include an elevated dais, small dressing rooms, and a projection booth. With level wooden floors, it also can be used for dances, motion pictures, and banquets. Food handling is accomplished through a dumb-waiter

from the kitchen which opens into a butler's pantry.

Space allocations are as follows:

The basement contains a four-lane bowling alley with a gallery for spectators. Mechanical equipment and storage rooms take up the remainder of the subsurface area.

On the ground floor are a barber shop, laundry pickup service, campus shop, kitchen, dining facilities, and post office. The post office is unusual in that it is not operated by the federal government but by the university and is used as a direct means of communication with the student body. Four thousand boxes assure each regular student's having a private box. Lockers are available on this floor for commuting students to store their books and personal effects. The ground floor also contains a 2000 square foot recreation room.

The first floor provides space for an air conditioned snack bar. The roof of the cafeteria, floored with tile to create an outdoor terrace at this level, adjoins the snack bar. An entrance lobby of 3000 square feet is at the head of the concrete ramp. The assembly room, two meeting rooms, two soundproof music rooms equipped

with record players and pianos, a lounge, a television area, the building manager's office, two unassigned offices, and a coat room are also on the first floor.

The second floor is devoted primarily to offices and meeting rooms for student organizations. This floor houses the student newspaper, literary magazine, yearbook and radio station with its studios and other facilities. The campus Y.M.C.A. and Y.W.C.A., as well as the student council, have their offices and meeting room here. In addition, there is a library-lounge that can be used as a meeting room, and a central office to be used in common by various campus organizations furnished with individual filing cabinets. The alumni association also occupies a suite on this floor.

The top floor contains two bedroom suites for guests of the university. This section is served by a separate air conditioning system that can be operated at night when the main unit is cut off.

Access to the kitchen, post office, laundry pickup, and machinery room is from a service yard, hidden from view by a decorative wall.

Orientation for pleasant vistas, the best environment, comfort and convenience were considered in determining the use of important spaces. The exterior areas are an integral part of the building. The long, covered terrace opens off the dining room onto landscaped sites appropriate for outdoor meetings and social functions, and playing fields reserved for intramural sports are adjoining.

Lawn sprinklers were included in the contract. Automatic fire sprinklers were installed in critical areas selected by the insurance company.

Under the Three-Cornered Dome

***sits M.I.T.'s new auditorium,
an achievement in engineering***

JOHN J. ROWLANDS

Director of News Service, Massachusetts Institute of Technology

THE MOST UNUSUAL FEATURE OF M.I.T.'s new Kresge Auditorium is its domed roof or shell—a curved slab of concrete, triangular in shape. A three-cornered piece cut from an orange peeling, representing one-eighth of the total surface, would have the proportions and shape of the dome.

The dome is not structurally joined to the rest of the building. The tops of interior walls are separated from the dome by as much as 4 inches, the

space being filled by rubber gaskets. Steel window frames are joined to the dome by metal slip joints that permit slight movement between them.

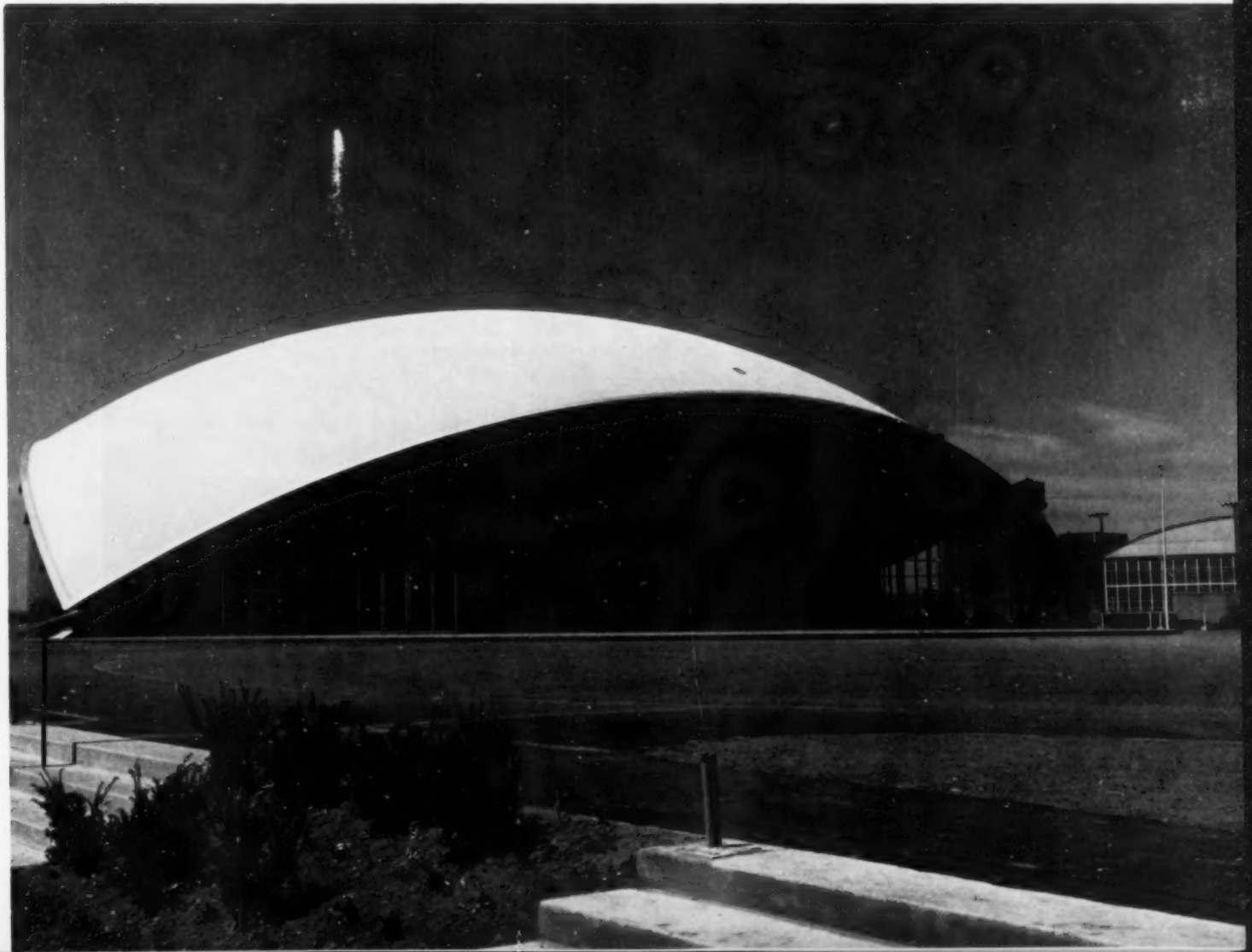
This movement is necessary because there are varying rates of expansion and contraction in different parts of the dome, depending on the weather and the position of the sun. The dome "breathes."

The concrete shell is only 3½ inches thick—thinner in proportion to its

area than the shell of an egg. On top of the concrete, however, are a 2 inch layer of cinder concrete, a felt membrane, 2 inches of glass wool, and an asphalt fabric. A quarter-inch layer of acrylic plastic mixed with glass fiber, beach sand, and other ingredients give the dome a color similar to that of weathered limestone.

These layers total about 8 inches in thickness at the top of the dome. (Near the base, the concrete shell is

New Kresge Auditorium of the Massachusetts Institute of Technology, Cambridge.





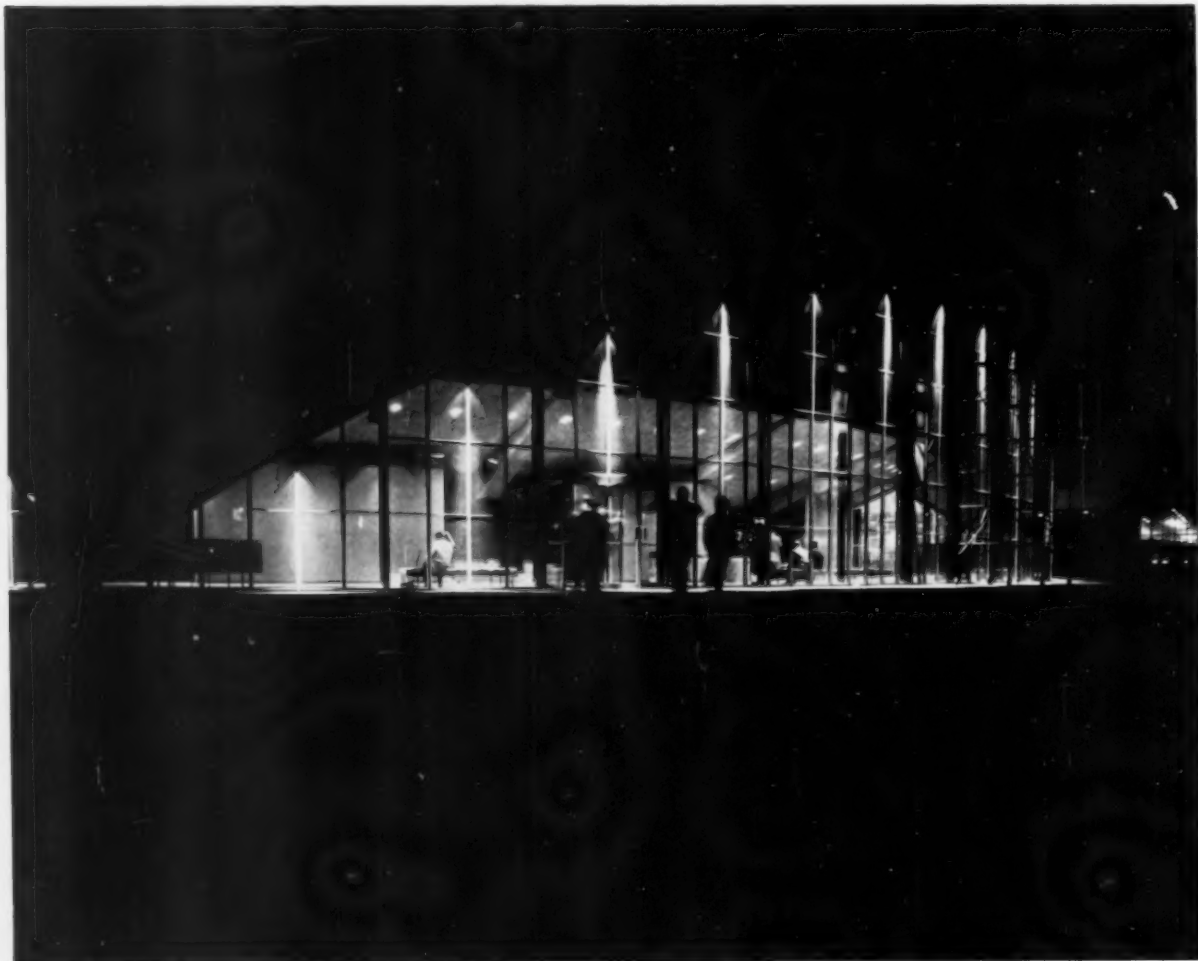
as thick as 20 inches.) The various layers serve not only to insulate the interior from cold and heat but also to keep out outside noises, such as the sound of airplanes.

The dome's total live load of 1500 tons is borne by its three corners, each of which stands on a massive concrete buttress sunk into the ground. At each of the three corners, the dome tapers into a heavy steel pintle, which rests on a steel bearing, so that the whole dome can move, though ever so slightly, in relation to the ground.

Engineering problems in building the dome were more like those encountered in building a bridge than those in erecting a conventional building.

The auditorium seats 1238 people. Backs of the seats, in three tints of green, two of blue, and one of orchid, give an unusual chromatic effect. The huge stage has room for 250 musicians. At the left is a choir loft with

Above: This view from inside the glass walls of Kresge Auditorium shows one of three points where the concrete dome rests on the ground. The entrance to the main hall is at the right. Below: This striking night view shows the main entrance and the foyer.





The rounded stage in the main hall of M.I.T.'s new Kresge Auditorium makes possible an unobstructed view from every seat in the hall. The choir loft is in the center of the picture. Above the stage can be seen some of the baffles which diffuse sound throughout the hall.

space for 75 singers. At the right is an organ loft.

Since the domed ceiling would tend to focus sound in certain parts of the auditorium, various acoustical devices were employed so that every member of the audience might hear well. Most important of these devices are "clouds," rectangular baffles suspended from the dome to diffuse sound.

Extensive testing of acoustics has been conducted. The cliché, "You can hear a pin drop," actually applies. A pin dropped at any point on the stage can be heard throughout the auditorium, provided the audience is quiet enough.

The clouds also serve to mask ventilating, lighting and sound equipment. A row of 15 spotlights not far from the center of the dome can be reached by a catwalk above the clouds.

Although speeches and concerts on the stage usually will not require amplification, there are loudspeakers in

the clouds above the stage. These include a "tweeter" and a "woofer" for high and low frequency sounds and can be used for radio, recorded music, and sound movies.

At the rear of the auditorium is a carefully engineered, fireproof projection booth, with lighting and sound controls and a motion picture projector. There are a soundproof booth for an announcer and two optical glass ports for television cameras. The needs of television were carefully taken into consideration in the planning, and the auditorium is one of the few buildings today with an abundance of built-in television facilities. As many as six TV cameras can be used at one time for recording a performance.

Television wiring within the walls of the auditorium enables cameras to be plugged in at various points. A cable runs underground to the near-by WGBH-TV studios. Television control trucks from other stations can

be parked at the rear of the auditorium, with easy plug-in connections with cameras inside.

Below the main auditorium is a small theater, seating 214, for chamber music, conferences and intimate dramatic productions. It also has facilities for television broadcasting.

Two large rehearsal rooms in the basement for band and orchestra were designed to meet high acoustical standards. They also can be used for radio and television studios.

Hidden below the ground level are enormous air conditioning units, in winter used also for making ice on the adjacent skating rink.

Construction of the auditorium was made possible by a gift of \$1.5 million from the Kresge Foundation.

Architects were Eero Saarinen and Associates, in association with Anderson and Beckwith of Boston, whose senior members are M.I.T. professors of architecture.

Effective Use of Space

including equipment and other facilities

DONOVAN SMITH

Director of Architectural Studies
University of California, Berkeley

MUCH ALREADY HAS BEEN SAID about the tremendous numbers of students that colleges and universities must be prepared to accommodate in the next two decades. I need not belabor the point that one of the major problems to be solved is that of providing the necessary building space. And I need not dwell on the necessity of increasing the effectiveness with which space, equipment and other facilities are used in order to keep the capital investment as reasonable as possible. We shall focus our attention on the practical question, "How can institutions increase the effectiveness of the use of space, equipment and other facilities?"

SCHEDULING OF CLASSES

Many institutions have adopted the practice of centralizing the scheduling of classes and the assigning of rooms thereto, usually in the registrar's office. Commonly, however, the "general assignment" category of rooms is confined to general purpose classrooms, the scheduling of all laboratories and most seminar rooms remaining the exclusive prerogative of individual department chairmen, who are not always required even to report the laboratory schedules to a central office. Even the term "general assignment classroom" becomes somewhat nominal when one department has an unquestioned first choice in the scheduling of classrooms in the building which bears the name of that department. I doubt that as many as half the classrooms, seminar rooms, and teaching laboratories actually are treated as general assignment rooms, even in institu-

tions with the most highly centralized scheduling of classes.

Theoretically, perhaps, the scheduling of all classes by a central agency could achieve the most nearly uniform distribution of classes throughout the day and week, and could therefore reduce the instructional space requirements to an absolute minimum. I doubt, however, that a single agency in an institution of any size could take sufficiently into account all the many tangible and intangible factors that should enter into the scheduling of classes.

Although I take a dim view of complete centralization of this and certain other administrative functions, complete reporting of all class schedules to a central office is necessary if uniform statistical analyses and consistent administrative decisions are to be made concerning instructional space utilization and requirements, either for the present semester or the distant future. In the performance and dissemination of uniform statistical analyses as a basis for reasonable space requests and objective decisions, I think there lies the best method of achieving maximum utilization of classrooms, seminar rooms, and teaching laboratories. Whether the request or decision is made by a chairman, a dean, a provost, or a president, it has been my experience that few unreasonable actions will be taken in the face of objective information pointing to a different course of action.

ASSIGNING SPACE

On the problem of assigning, *i.e.* allocating, building space—not just classrooms, seminar rooms, and teaching laboratories, but *all* types of space—I must take a different stand. Here I believe the weight of the argument is in favor of centralized administra-

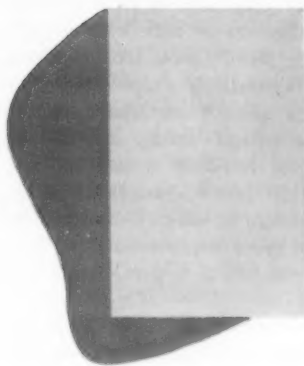
tion. To the questionable extent that better physical facilities guarantee a better educational performance, and to the extent that many rooms are better than a few, I would regard as administratively remiss any chairman who did not fight for every possible square foot of space for his department, even to the point of scheming and conniving. I cannot, therefore, expect him to be embarrassed and silenced by tabulations comparing his department's floor space with that of another department, even though I expect to shame him out of requesting that more of his classes be scheduled at 10 o'clock on Monday, Wednesday and Friday by disclosing that he already is responsible for more than a fair share of the congestion at that hour.

Another argument for central administrative assignment of space lies in the fact that it emphasizes, and encourages acceptance of, the principle that all building space on the campus belongs to the institution as a whole, that no building or single room "belongs to" an individual department or person, that every assignment and occupation of space is temporary in the sense it is subject to periodic review and to whatever change will serve the greatest good of the institution as a whole.

PLANNING NEW BUILDINGS

Much of what can be done in the way of administratively controlling the planning of new buildings consists in the application of the foregoing principles to this particular problem. The standards against which instructional space utilization in existing buildings is measured should serve also as the design standards for classrooms, seminar rooms, and teaching laboratories in new buildings. The measurements of each department's existing building

From a paper presented to Discussion Group 17 at the 10th National Conference on Higher Education, sponsored by the Association for Higher Education, Chicago, 1955.



No building or room "belongs to" a department or person. Space assignments are temporary, in that they are subject to periodic review and change to serve the institution's greatest good.

space of each type, assuming those measurements are expressed in comparable terms for all departments, should serve, first, to determine which departments are in greatest need of additional space, and, second, to guide the detailed planning of each new building.

These principles must, of course, be applied within an administrative framework if they are to be more than idle theories. The standards must have been officially accepted if they are to have any force. All communication of ideas between the many persons to be housed in the building and the architectural firm designing the building must be channeled through one office, or even one person, if the architect and the building are not to suffer the fate of a leaf caught in shifting, inconstant winds. And, whatever the channel, there should be administrative mechanisms to ensure that the building will be planned on a broader basis than the needs of the department that will move into the building the day it is completed.

ADMINISTRATIVE FRAMEWORK VARIES

The details of the administrative framework and mechanisms necessarily will vary from institution to institution. The supervisory architectural responsibilities of general campus planning and design sometimes will best be discharged by an outside firm of architects and sometimes by an office or agency within the institution's administrative hierarchy, depending on the circumstances of the individual institution. The advice of many academic and administrative staff members certainly should be considered during the design of a building, but the extent to which this process needs to be controlled by the formal establishment of advisory committees also will depend

on the circumstances—and, of course, any unshakable traditions—of the institution.

OTHER ADMINISTRATIVE CONTROLS

Although their virtue may be simply that they take advantage of human nature, there are a few administrative devices that help to achieve better space utilization, whether in existing buildings or in proposed structures, and whether a formal organization of advisory committees is used or not. For example, a great broadening of points of view and objectives seems always to be achieved whenever the membership of a space assignment or building planning committee is so chosen that the members representing the departments immediately concerned cannot easily dominate the committee. If it does not seem practical to confine the directly involved membership of the committee to a numerical minority, the same end often can be accomplished by appointing an "outsider" to the chairmanship. In the absence of formally organized committees, the same principle can be applied among the administrative officers handling the problem.

Several years ago, I heard of the idea of charging a flat rate for each square foot of building space assigned to or used by a department, including *pro rata* shares of general assignment classrooms, as a means of inhibiting empire builders. I was not much impressed by this idea. For one thing, I suspected that once the battle had been fought for the inclusion of a certain amount in the departmental budget for the first year under that system, the "gimmick" would lose its effectiveness. Recently, however, I was told of a variation of this system being used effectively at the University of Florida.

As I understand the Florida system of charges, the variation is that *no* charge is assessed for the use of general assignment rooms, which are centrally administered. Consequently, even the self-appointed proprietors of the most sacrosanct buildings rushed to get in line at the window where rooms were first turned into the general assignment category and taken off the department's expense ledger. Ever since, there has been great alacrity in the turning over of rooms for which the immediate departmental need has declined, all with wondrously good effect on space utilization.

PLANNING AND CONTROL STANDARDS

One may well ask, "What are, and where do we get, the space assignment and utilization standards against which to measure current performance and by which to guide the planning of new building?"

Classrooms, seminar rooms, and teaching laboratories generally are assumed to represent a far greater proportion of an institution's total building space than is found to be the case when actual measurements are made. In a full-scale university, for example, the floor area of all such rooms may constitute only about one-third, and sometimes no more than one-fourth, of the institution's total nonresidential floor area. (The total of which I speak is simply the total floor area of the rooms themselves—what I like to call the "net" floor area of a building—and does not include corridors, stairs, public toilets, furnace rooms, and other building services, or walls and partitions.) In the simpler colleges with little or no research, the space used by organized classes is often found to account for less than half the total floor area; even in junior colleges, the organized class instruction rarely uses

Someone must be specific

Educational planning must be sufficiently detailed and quantitative to serve as a basis for over-all campus plans. The usual pat solution offered for plant planning is the designing of multipurpose and flexible buildings. This is, however, only a limited solution, for flexibility in most forms bears a price tag, particularly if the aim is to make all parts of the building readily convertible to a variety of uses, which involves different floor loadings, different utilities, or different environmental conditions. Even the standard movable metal partitions must be rearranged two or three times before their added initial cost becomes an economically sound investment for the college or university. Any academic administrator who continues to avoid the task of defining educational programs in quantitative terms will get no better buildings than he deserves.

much more than half the total building space.

Although it will therefore be only a modest beginning, I suggest that we first consider the setting of standards for instructional rooms. Although the technic falls considerably short of being a truly scientific method, reasonably reliable standards for room utilization in terms of the number of scheduled hours per week can be based on an analysis of the performances actually achieved in a number of institutions, *taking into account* the principal circumstances and scheduling practices peculiar to each institution. Similarly, standards can be set for the average relationship between class size and room capacity. Next, a statistical analysis of past, present and projected teaching programs can define the distribution of classes by size and type at each level of instruction in each of the several subject fields.

At this point it becomes a matter of simple arithmetic to translate a given teaching program into figures representing the required number and capacity of classrooms, seminar rooms, and teaching laboratories. And if the analysis has been based on sufficient data to establish the normal floor area per student station in each type of room in each subject field, the given teaching program can be translated directly into figures representing the required total amount of floor space in instructional rooms.

By the application of equally simple arithmetic to the numbers of books to be housed and the number of students to be provided reading room stations,

a given library program can be translated into a figure closely approximating the required number of square feet of building space. This step presupposes, of course, not only the establishment of normal floor areas per volume and per reading room station, including allowances for staff work areas and other auxiliary facilities, but also a clear definition of library policy.

Beyond those facilities, the problem of setting standards becomes more difficult and less susceptible of statistical analysis. The only technic that I have been able to use with any semblance of success on such areas as research laboratories, faculty offices, and other types of space for which there is no handy objective measurement of average individual requirements or over-all utilization requires a sort of double attack. On the one hand, there has to be a complete physical inventory of all types of space, culminating in the tabulation of aggregate figures constituting a statistical description of each of the several types of space serving the several functions of each department. On the other hand, there has to be developed a fairly complete firsthand acquaintance with the many circumstances and situations covered by the statistical descriptions.

Over a period of time, generally several years, a variety of good, bad and indifferent circumstances will occur in each of the various types of department. If, over that same period of time, both the statistical and the firsthand studies are kept up to date, the investigators should develop a

reasonably good idea of what a statistical description of each kind of circumstance should look like. It then becomes a relatively simple matter to translate a given educational program into a statistical description of the amounts of building space that are considerably better than those made in the vacuum in which so much estimating of space requirements, particularly for the future, is performed.

CHANGING PRESENT PRACTICES

I believe there should be a change to an objective campuswide long-range basis of physical planning wherever present planning is based primarily on the personal ideas and desires of individual members of the department which will be the new building's first occupant, particularly if those ideas and desires are being transmitted haphazardly and unconnectedly between the individual staff members and the architect. I have mentioned a few devices to discourage the development of a proprietary attitude toward the building by the department it is to house. And I believe I have implied that the pain and strain of developing standards in terms of average floor space per person will be more than repaid by the savings resulting from improved physical planning.

I would like to suggest that we stop giving our buildings the names of the departments for which we build them. This may seem to be a trivial suggestion. I believe, however, that this one step will produce the greatest return for the effort required—if only because it requires so little effort!

How can the educational effectiveness of new physical plants be increased by changing present practices in educational planning? The change that I regard as most important, both educationally and in terms of capital outlay, is a change from the *absence* of educational planning. By that I mean an absence of educational planning sufficiently broad to serve as the basis for over-all campus planning, and sufficiently detailed and quantitative to serve as the basis for the design of an individual building.

No one would engage an architect to design a home for a specific client without informing him as to the size, composition, activities and interests of the family to be housed. In the case of college and university buildings, however, I believe the activities to be housed are too complex to be fully understood by any outsider, however

good his intentions and his professional qualifications.

But even if the architect is capable of translating a hazily defined educational program into quantities and dimensions, do the academic and administrative staff members of our institutions *want* the architect to decide by what methods and in what numbers students are to be instructed in each subject? Or how many faculty members will be required for each teaching program, and how much and what kind of research each faculty member will perform?

And even when all such matters are defined in minute, numerical detail by the department for which a building appropriation has been procured, do the president and the provost and the dean *know* that these departmental projections of its future are consistent with those of other departments and of the institution as a whole?

No administrator can accurately predict what the future will bring, even in total numbers of students, to say nothing of their distribution among subject fields and levels of instruction. And no one, of course, can foresee all possible developments in educational methods and research technics. But *someone* has to assume some fairly specific numbers and quantities and types of students, staff, equipment and methods before the plans of a building can be drawn.

The usual pat solution offered is the designing of multipurpose and "flexible" buildings. This is, however, only a limited solution, for most forms of flexibility bear a price tag, particularly if the aim is to make all parts of the building readily convertible to any of a variety of uses which involve different floor loadings, different utilities, or different environmental conditions. Even standard movable metal partitions must be rearranged two or three times before their added initial cost becomes an economically sound investment.

Whether the building is flexible or not, the fact remains that it is designed primarily for its initial use, and that it cannot be most effectively used for anything but the numbers and kinds of people doing the amounts and kinds of things that were assumed as the basis for the design. An academic administrator who continues to avoid the task of defining educational programs in objective, quantitative terms will get no better buildings than he deserves.

Good Manners for Architect and Client

WALTER SCHOLER

Walter Scholer & Associate Architects, Lafayette, Ind.

THE WORDS "ARCHITECT" AND "client" imply a relationship between two persons or organizations, one serving the other much in the same spirit, professionally, as a doctor serves his patient or a lawyer his client. A good doctor strives for a speedy recovery of his patient and a lawyer tries to keep his client out of trouble. The architectural profession has as its high aim the best possible solution of an architectural problem at the least possible cost.

The successful architect views his responsibility most seriously. His devotion to his client's needs and problems must be complete. At the same time he must deal fairly with contractors and should never require more from them than that which is clearly required by contract documents. He must, however, require full compliance.

In discussing the relationship between architect and client as it relates to colleges and universities, it becomes necessary to consider this as a relationship between two organizations. The complexities of modern day collegiate structures with their special features, whether the problems involve complicated and special laboratories, housing and feeding of students, or simple classrooms, requires specialists in many fields for their successful construction. The architect, therefore, surrounds himself with associates or employs a group capable of solving the many complex problems.

Roughly there are three methods by which architectural services are rendered to colleges and universities:

(1) by architects in private practice who are paid a fee for each individual undertaking; (2) by a university architect employed on a salary and furnished a staff, or (3) by a state or university architect who supervises architects in private practice to produce specific projects for state owned educational institutions.

The architect's relationship with his client has several distinct phases and will be discussed in their usual sequence.

The requirements of a specific problem must be clearly understood by owner and architect. This cannot be stressed too much since the degree of understanding can determine the difference between a good or bad final result. The client should prepare a written program for the specific building stating the purpose thereof, what is to be accomplished by the project, and other information to clarify the purpose of the building.

It has been said that anything that is understood can be placed in writing. This should include a general list of rooms and areas, or at least a schedule of student loads and other pertinent data from which the architect can prepare a schedule of spaces and rooms. This material should be reviewed with the architect and revised until a fairly clear picture of the requirements is fixed. From this the architect can roughly estimate the total square foot areas of the building by adding percentages for corridors, walls, mechanical features, and other space consuming areas. Then if a square foot cost of a similar type

building is known—and this information is usually available—a rough estimate of cost can be made.

If it appears that the cost of the project is in line and within the funds available, then sketch studies can be started by the architect. If the estimated cost seems above the amount of funds available, then the requirements should first be adjusted and a new program prepared.

Almost every client has an inclination to prepare diagrammatic floor plans to describe what he has in mind. This is not good procedure, except perhaps to describe a specific part of a requirement. A plan, even if diagrammatic, once drawn by a client becomes fixed in his mind and usually is detrimental to the project and limits a wide consideration of the solution of the problem. The architect is better equipped by training to visualize areas, organize space, and design the project into a composite whole.

The matter of location on the campus must be determined, unless happily it has been located by a well organized and adopted campus plan. Location must be known before sketch studies can be made. Orientation and topography are important factors. When the architect has developed a basic design including general plan arrangement, design characteristics, and other pertinent but general considerations, he must obtain approval from top level administration. Often, the matter of "style" causes controversy, particularly if a new building is to be placed among old buildings on an old campus. Sometimes boards of control do not like "change" in architecture even though they may be in accord with advancement in all other matters.

Boards of control should lean heavily on the architect's judgment with respect to design. He should approach this matter with a sympathetic understanding of the problem.

The preliminary design, the work leading up to it, and its acceptance and approval are important phases of the development of any project. After a general meeting of the minds with respect to arrangement, design and cost, the next important step is the development of the working drawings. Before these are begun a proper relationship should be established between client and architect.

At this point in the process of development it is important that the client's wishes and requirements be transmitted to the architect's office in a well organized manner that has been agreed upon and will be adhered to during the development of the working drawings. It is best if one person can represent the client. Often the head of the department concerned with the building acts as the representative himself, or the administration may appoint one person to collect specific requirements from committees or groups and impart these to the architect's office.

KEEP COMPLETE RECORD

It is extremely important that instructions flow from a source that has been authorized to give such instructions as have been agreed upon by a committee or group and to obtain answers to questions asked by the architect. Whatever method is adopted, it is important that a complete record of all instructions, changes and additions be kept and made available to client and architect.

After the working drawings and specifications are completed, some method of assuming the responsibility for the arrangement and facilities shown should be agreed upon. Generally the administration requires the department head to sign the drawings.

Contractors usually are allowed about four weeks for the purpose of preparing their proposals for the work.

The time allowed for public work usually is established by law.

For projects that are financed by public funds the law usually requires that bids be taken and read aloud in open meeting. For privately financed schools this is not a requirement of law but is, nevertheless, considered a good policy. Contractors spend much time and money figuring projects and they are entitled to hear the bids read in open meeting.

After contracts are awarded, it is the architect's duty periodically to inspect the work and satisfy himself that the provisions of the contract are being fulfilled. On large projects it is recommended that a clerk of the works, meeting the approval of the architect and client, be at the site of the project at all times during working hours. The salary of the clerk of the works is paid by the client.

Something should be said about color schemes and furnishings. Definitely, the color schemes should be developed by the architect. Typed schedules and color chips should be prepared and submitted to the client for final approval. This should be done early in the construction period as many colors need to be determined early, such as baked-on enamel finishes, interior enamel brick, terrazzo, tile.

Often it is advantageous to have the architect prepare plans and specifications for furnishings including portable furniture, draperies and other miscellaneous items. This depends largely on how well the client's business office is equipped to determine the proper equipment and to obtain bids. Most architects are not anxious to prepare plans and specifications for furnishings as it often leads to financial loss to them. In any event, their opinions should be obtained on the character of equipment and furnishings in order that the whole structure and furnishings may present a harmonious result.

Competition for Income

... between residence halls and college unions causes friction on many a college campus. Gerald Erdahl of North Carolina State College will tell in the October issue how this problem can be handled satisfactorily.

Ask yourselves these seven questions

Before Buying Resilient Flooring

JOHN F. RHILINGER

Purchasing Agent, Dartmouth College

OF THE MANY DIFFERENT TYPES OF resilient flooring materials offered on the market today, I should like to compare the six types most generally accepted for institutional use: asphalt, vinyl-asbestos, rubber, cork, vinyl, and heavyweight linoleum.

With flooring, as with everything else that we buy, our aim is to realize the greatest ultimate value for every dollar spent. When we buy resilient flooring, we usually are spending several thousands of dollars, an expenditure that demands a great amount of thoughtful consideration.

The task of selecting the best material for a specific purpose seems to be a difficult one. However, if we understand a little about the properties of each, our difficulty is minimized by the simple process of elimination. The greatest task, in the end, undoubtedly will be the selection of color or pattern. This probably is best left to those in charge of decoration or to those who will "live with" the floor. The design or color may affect the price but the difference is negligible.

From a paper presented at the New England Group meeting of the National Association of Educational Buyers.

Before we can make an intelligent recommendation as to which type of material to buy, we must know the answers to the following questions:

What is the location of the floor?

If the floor is on or below grade, several types are automatically eliminated since they are not recommended for this type of application.

What is the type and condition of the subfloor? Some of the materials are adversely affected by alkaline deposits in cement. Dampness in the subfloor also will limit our selection. Badly worn subfloors will require considerable costly preparation, depending upon the resiliency of the material.

What are the amount, type and concentration of traffic expected? For heavy traffic areas, the tougher asphalt and vinyl content tiles will give longest wear. For lighter traffic areas, not exposed to weather conditions, our selection might be the more beautiful rubber flooring.

What types of materials are most likely to be spilled or tracked onto the floor? Heavy objects dropped onto the more brittle floorings, like asphalt, will crack or otherwise damage the tile. Greases, oils and acids will damage

most types. Although pure vinyl might afford the best protection against acids, greases and alkalis, manufacturers caution against its use in areas subject to frequent spillage of acids. For a laboratory floor, therefore, it probably would be best to select one of the several types of cement composition floorings in lieu of a resilient flooring.

Are noise and underfoot comfort important factors? Cork and rubber would be the first consideration here, provided it could meet the other specifications. Cork is selected mainly because of its acoustical properties.

How frequently can we refinish the floor? All of these materials require occasional refinishing to ensure maximum life and pleasing appearance—some more frequently than others. In instances where it is not possible to refinish the floor more than once or twice a year, asphalt or vinyl-asbestos finished with two coats of asphalt finish instead of wax will wear longer than some of the other tiles insufficiently waxed. I doubt that the additional cost of pure vinyl tile is justified on this basis alone.

Is initial cost the most important factor? This important question arises

here as it does with every transaction. We are considering *ultimate value* not always realized from *lowest initial cost*. Occasionally, it might be advisable to request a budget increase rather than to spend available funds for an installation that will not meet actual requirements. It might be wise to consider the possible use of underlayments, several types of which are available in sheet form and are used between badly worn or loose subflooring and the resilient tile. The function of underlayments is to supply a firm base for the tile. In figuring the cost of the underlayment, we should take into consideration the fact that the labor of sanding is eliminated, some of the nailing is unnecessary, and it is not necessary to apply felt under the tile. The total *additional cost* for the installation would be approximately one-half the total price of the underlayment material. This additional money, spent in the beginning, might ensure maximum life from the flooring.

PROPERTIES OF EACH TYPE

Let us consider briefly the properties of each type.

Asphalt: Composed mainly of asphalt binders and asbestos fibers, asphalt tile is cheapest of all. It resists normal moisture and, therefore, is suitable for use on all types of floors—on grade, below grade, or suspended. It is relatively easy to clean, nearly fireproof, resists cigaret burns and ink stains, and is very durable. However, because it is hard and brittle, it chips easily, tends to crack under heavy loads, is least quiet of all, and requires a very even subfloor to prevent cracking under normal traffic conditions.

Being soluble in grease, oil, gasoline and other solvents, regular standard asphalt tile will not wear well in areas where it is exposed to these substances. It is obvious, also, that asphalt tile should not be cleaned or waxed with materials containing any of these solvents. During the past few years, manufacturers have offered special greaseproof asphalt tiles that overcome this problem, at least to some degree. Nevertheless, I have not been convinced that it is the best answer to the grease problem.

Vinyl-Asbestos: This material is similar, in most respects, to asphalt tile. The combination of asbestos fibers with vinyl plasticizers makes a more flexible tile. It, therefore, will conform more readily to uneven surfaces

without cracking. The addition of vinyl also makes it more durable and gives some resistance to oils, greases, alkalis and solvents. The cost is approximately double that of asphalt tile.

Rubber: Since World War II, synthetics have proved much more satisfactory for flooring purposes. Rubber tile is used chiefly because of its sound absorbing qualities and its attractive appearance. Very resilient, it has high resistance to indentation and abrasion. It will not crack easily. However, it is adversely affected by excessive heat, moisture and the solvents referred to. It is suitable for grade level installation, provided a waterproof cement is used, but should not be used below grade or in areas subject to excessive dampness. The cost of rubber tile is approximately two and one-half times that of asphalt.

Cork: Ground cork and resinous binders make up this attractive tile. Today it is used mainly for its acoustical properties and underfoot comfort. Because it stains easily and is difficult to clean, it is not suitable for most institutional applications. The cost of cork flooring is relatively high.

Linoleum: Heavy gauge linoleum is composed of oxidized linseed oil, finely ground cork and wood flour, fillers, color pigments, and resinous binders. It is relatively easy to clean and offers special effects in design. It cannot be used on grade, is subject to indentation from heavy objects, and has shorter life than any of the others. This material is more suitable for faculty housing units rather than in the main institutional buildings.

Vinyl: This most recent addition to the resilient flooring family is most versatile of all. Composed of vinyl-chloride resins and plasticizers, its main advantage is resistance to grease, oils, fats, mild acids, alkalis and detergents. Extremely resilient, it recovers from indentation rapidly. Color is constant throughout the thickness of the tile. It is easy to clean and may be waxed with the longer wearing solvent type waxes. Vinyl is highly resistant to abrasion. The main disadvantage of vinyl is the cost, which runs approximately five times that of asphalt.

SELECTION NOW EASY

After comparing the properties of these materials, and knowing the requirements, we find it is comparatively easy to make our selection. In residence hall rooms, where traffic is at a minimum, we might, for the sake of

economy, select the cheaper asphalt. In the residence hall corridors, however, we probably would be wiser to spend the extra money for vinyl-asbestos from which we expect to realize longer life under heavier traffic conditions. In the library, where noise is a factor to consider, cork probably would be best on the suspended floors of study rooms, and rubber in corridors and traffic areas for longer life and comparative ease of maintenance. In the dining halls, where traffic probably is heaviest, and where grease is a problem, we possibly would realize our greatest value, in the long run, by investing in a pure vinyl tile installation.

Variations in weather conditions may play a part in our selection. It does not necessarily hold true that a flooring used in warm, dry climates will be satisfactory in areas of seasonal hot and cold, or that a material giving excellent wear under soft soled street shoes will wear well under heavy ski boots or similar footwear.

PROFIT BY OTHERS' EXPERIENCES

You can profit by the experiences of others. Investigate in your own immediate vicinity and see what results are being realized from different types of flooring for a given application. Consult several flooring contractors and study the recommendations of each before making a decision.

The person who buys the resilient flooring should know something about its upkeep. In general, most of these materials react unfavorably to excessive amounts of water. Indeed, many floor problems can be traced to the improper use of water and detergents.

There is some difference of opinion on the matter of waxing vinyl tile. Originally, the manufacturers emphasized the fact that no wax was needed to maintain the original high gloss, but it is now generally accepted by the manufacturers that wax can be used to advantage with vinyl as with the other types.

Regardless of the type of flooring, frequent "dry" maintenance, with occasional waxing, is required if you expect to get the most out of your investment. Care in the selection of materials to be used for cleaning and waxing will pay dividends for, regardless of the material selected and the price paid, unless you give it the proper care you may quickly begin to subtract from, rather than add to, the appearance of the physical plant.



A milk machine in a vending unit at the University of Miami is patronized by students on the north campus, where a heavy schedule of night classes makes the 24 hour refreshment unit a real service.

Vending Machines

work 24 hours a day,
profitably, too

EVERETT W. LINER

Chief, Auxiliary Departments Office
University of Miami, Coral Gables, Fla.

TEN YEARS AGO AUTOMATIC VENDING appeared on the campus of the University of Miami as a temporary measure. Today, vending is a \$50,000 annual business on the university's three campuses, and very much in the picture in expansion plans.

Originally, automatic vending made its appearance because it was necessary to take care of the needs of G.I. freshmen quartered on a campus set up for that purpose 15 miles south of Coral Gables. This campus had only limited cafeteria and soda shop facilities. In September 1946 we opened temporary classrooms and housing quarters at the former Richmond Naval Air Base and obtained permission to install seven or eight coolers for bottled soft drinks and a few cigaret and candy machines.

Two years later, when the south campus was abandoned except for food and plant research activities, we moved most of those machines to the main and north campuses in Coral Gables.

Growth of the vending machine business has been gradual, with additional units being installed as the need or demand arose. Today there are approximately 75 on-campus food, beverage, cigaret, candy and confection machines in addition to a multiple-unit installation of nine machines installed at the beginning of the 1954-55 year on the north campus.

In our experience, vending has two principal advantages: As a supplement to services of the cafeteria and soda shops, it serves students and

faculty on a 24 hour basis, making it possible for night school personnel to obtain refreshments and food at hours when normal facilities are closed. As a convenience it provides a real service where traffic is heavy and speed of serving is a requirement.

The case of the new multi-unit installation illustrates the advantages of 24 hour service. Located in a patio archway on the north campus, where a heavy schedule of night classes is held by the engineering school, the installation replaces a luncheonette that formerly operated there. It consists of machines vending milk, ice cream, soft drinks, sandwiches, coffee and hot chocolate, candy and pastry. In a 38 day period last fall it did

business amounting to \$3,543.55, as compared to \$2,830.35 for the luncheonette operating in the same area the previous year.

The increased sales are due largely to the fact that night school students now can stop for a snack at any hour. The vending unit also is an improvement over the luncheonette from the standpoint of sanitation, as it was difficult to maintain a satisfactory standard in the crowded space available for over-the-counter service. The unit is serviced and operated on a commission basis by a vending service company that sends an attendant to the site during each midday rush period and provides sanitation service during that period.

In Eaton Hall, new \$1.5 million women's residence hall that was opened last fall, vending machines went in on every floor as a matter of course. Many are located in the apartment buildings that house 2400 married and single students on the main campus.

With the exception of a few machines earmarked for certain student activities, all profits from vending machines go into a general university fund. A student service organization provides week-end campus cleanup service on bottles, and receives a portion of the net profit from the vending of bottled soft drinks on one campus.

Operation of the machines comes under the jurisdiction of the auxiliary department's office.



Nine milk vending machines on the University of Wisconsin campus are selling 1700 third-quart cartons daily.

IN A MANAGEMENT SURVEY, THE attitude should be one of cautious hopefulness. Generally, results can be expected from a management survey when it establishes organizational balance under a strong top management, when it defines and realigns responsibility, when it inaugurates effective budgetary controls, and when it streamlines procedures and methods.

The purpose of this section is to discuss the various types of management surveys and their respective merits so that selection can be made of the one best suited for the institution in question. It contains some account of the involvements and the processes characteristic of each type of survey to decide which of the three agencies should conduct a contemplated management survey: professional management consultants, properly qualified personnel from the college or university, or a combination of both.

The interest of a substantial number of management consultant firms in studying institutions of higher learning has been noteworthy and may have influenced the decision in their favor by most institutions. The rationale seems to be a desire to utilize the knowledge they have gained from previous experiences both in business and in academic spheres. Moreover, some school officials feel that the judgments of outside experts are weighted with more authenticity; that they are objective, unbiased and free from emotional involvements. The relationship is akin to that with a public accounting firm.

If it is decided to employ professional management consultants, it is important that the negotiations cover all phases of the work to be done. Although nearly all professional organizations that conduct surveys in educational institutions represent a high standard of integrity, still a survey is a complex undertaking and is conducive to misunderstandings and misinterpretations. Hence, there should be a clear meeting of the minds between the college or university and management consultants concerning the areas to be covered, the penetration and technics to be employed.

In addition to having a definite understanding on the foregoing, other questions should be asked of the management consultants. Questions should include information relative to the experience of the management consulting firm in the educational fields.

**Home talent,
professional talent,
or joint project**

Who Should Conduct a Management Survey?

IRVING SALOMON

*Consultant, The Fund for the Advancement of Education
New York*

Part 2 of a series

References should be obtained that would disclose data on the integrity, the standards of performance, and experience. While there are obvious advantages in selecting consultants with some background of experience in educational institutions, many elements of a scholastic survey do not differ so completely from that conducted in a business enterprise as to preclude consideration of some management firms who enjoy a fine reputation in industry but who have had little or no academic exposure.

While it is desirable to review management consultants' experience with other institutions that have employed them, it should be borne in mind that their experience is only applicable in such parts of another institution if internal conditions are similar. The survey reports of other institutions have a limited value because there is no yardstick for measuring the quality of the recommendations in terms of results from implementation. While this is the real test of a survey, an examination of reports of other institutions is useful to judge the degree of penetration, analytical proficiency, and style of presentation. Such a report, however, should not be used as the basis for any decision, because every college and university

differs in such basic essentials as objectives, organization, financial support, character, attitudes, management functioning, and fiscal operations.

Because of this there should be an examination of the *modus operandi* of any firm of management consultants who have had considerable experience in the collegiate field. It should be verified that they have no preconceived ideas, nor have they developed standardized or stereotyped processes of fact-gathering and research technics. Experience is priceless, provided it does not become static or routine.

A self-survey also has obvious benefits. The cost is considerably less if members of the institution's own staff are used. Moreover, they are intimately acquainted with the personnel, traditions and policies of the university or college. Hence they should be able to supply more pertinent recommendations that might require less evaluation and permit earlier installation. In some institutions, members of the faculty have been lent to industry as consultants and may possess some useful experiences.

The third alternative might automatically solve the question if either of the two arrangements prove to be difficult to decide. It involves employ-

Before You Decide to Use Home Talent, Answer These Questions

1. Are the proper skills available? Are there individuals with the stature for meeting both the investigative and analytical requirements in the areas chosen for study?
2. Should different individuals be assigned to evaluations and judgments than to the task of fact-gathering?
3. Are the members of the proposed team sufficiently free from other responsibilities so that they can complete the project without undue interferences or delays? Also, will they be available to serve on a continuing basis after the current project is completed, which is highly desirable?
4. Will the same individuals be used to install the recommendations? If so, do they possess the know-how and necessary tact?
5. What is the climate for the study? Will they have full cooperation from other members of the institution's administrative staff, in both the investigation and installation?
6. Inasmuch as faculties are taking an increased interest in an efficient and economical administration, what would be their attitude, first, toward the principle of selecting personnel from the staff, and, second, toward the candidates proposed?
7. When the results and recommendations are made known by the team, will they receive substantially the same acceptance and be considered as valid by the board, executives, faculty and personnel affected as though the recommendation were forthcoming from professional consultants? Would their opinions be even more highly regarded owing to their intimate association with the institution? Would there be respect for their competence and objectivity?
8. Is there likely to be a longer delay in action on recommendations because of conflicts or controversies than if the recommendations were reported by professional management consultants?

ing a team that consists of both professional management consultants and personnel from the institution. While a unit comprised of men from both backgrounds could have the advantages of both types of surveys, it also creates certain problems. However, they are not overwhelming because they relate primarily to organization and lines of authority.

The matter of over-all responsibility, direction and guidance must be determined and established in a clear-cut manner. Normally this should be in the hands of professional management consultants. The fact-gathering and investigative processes should be vested in the hands of members of the institution's own staff except in areas of sensitivity or antagonism, where a joint team would be more effective. The assignments and responsibilities will vary depending on the functions studied, technics utilized, skills and experience of the individual surveyors, and of course the sum appropriated for the project. Obviously this calls for close coordination and, above all, for a distinct understanding by each participant of the scope, duties and responsibility assigned to each group.

Furthermore, other decisions should be made beforehand, including ques-

tions involving the nature of any report, who writes it, and who will make the installation of the improvements recommended. Though professional counseling may dominate the procedures, it is still necessary to answer most of the eight questions outlined above applying to self-surveys.

The combination of the two groups has several advantages, the most obvious being that if personnel from the institution is available with the experience and talent and/or the potentiality for training and sophistication in this field, the institution benefits for future endeavors. To have skilled personnel on the campus available to serve on a continuing basis has considerable merit, as the need might be quite constant in one area or another. The institution has thus established an agency of its own for preventive as well as diagnostic therapy. This should not, however, outweigh other considerations because professional consultants also furnish this necessary continuing service.

The consultant selected should be the one capable of making the most penetrating investigations, analytical evaluations, soundest recommendations, and, with these, enjoy an internal cooperation that will inspire an enthusiastic and concerted effort

to institute the improvements recommended.

PROFESSIONAL SURVEYS

A survey conducted by a firm of management consultants should accomplish the following:

1. Point out problems, administrative changes, and economies that have not been recognized.

2. Confirm and point up deficiencies that have been recognized by executives of the institution, such confirmation providing a validity that is often needed by the officials in order to proceed. It should also supply dimensions and priorities which may have been lacking previously.

3. It should bring attention to methods and activities that are uneconomical or that lower the level of accomplishment, including those that cut across policy, philosophy and tradition. If any traditions have been historically sacrosanct, self-surveys might tactfully omit them. Nevertheless, placing this information on record may be wise for review at a more appropriate future date.

4. It should stimulate self-examination, particularly in the areas not covered, perhaps even indicating an applicable methodology.

5. It should include practices of similar institutions, especially where analogous problems have been solved effectively. It also should include comparative statistics and budgetary figures where available and meaningful.

Prior to entering into negotiations with management consulting firms, it would be advisable for certain members of the staff of the institution to make a brief reconnaissance study of all the areas in the institution that might be included in a contemplated management survey.

In determining which functions or departments should be surveyed, the following should be borne in mind:

1. The professional surveys that have been most meaningful and fruitful to date concern themselves with the business and financial management, the administrative functioning at all echelons, and such other elements as are likely to provide potential economies or, at least, contribute to a higher level of achievement.

2. After selecting approximately 10 or 12 areas where a survey might yield the most results, it is time to assign priorities to the remainder of the areas under consideration. Thus, the sum allocated for the survey is most likely

to be used where the opportunities for benefit are the greatest.

3. Even if the allocated sums are adequate for a more extensive survey, it should not include more territory than the institution has the capacity to evaluate and effectuate promptly.

4. Although there is a discernible trend by some management consultants to widen their scope of operation, many of them lack experience in some of the non-administrative areas and often lack the broad perspective necessary. Moreover, the same areas usually lend themselves better to an appraisal by the personnel of the institution. Examples of these are program analysis, plans for earlier fruition of the educational goals, faculty salary practices, and certain phases of instructional costs.

WHAT TO CONSIDER IN DISCUSSION

In negotiating with a firm of management engineers, in addition to having an understanding of the areas covered and technics to be employed, it is suggested that the following be included in the discussion:

1. The names of other colleges and universities where the firm has made surveys. More important than perusing the reports of such surveys is the obtaining of expressions concerning the quality and usefulness of the report delivered, particularly in terms of the resulting installations.

2. The qualifications of the individuals scheduled to do the survey. This includes both the number that comprise the team as well as the data concerning the years of experience and expertness of the individual members. Also, it should be definite whether the project will have at least part-time attention of one of the partners or top executives of the firm.

3. It would be desirable to have some knowledge of the processes, technics, relationships with the institution's staff, and the philosophy of the firm of management engineers; also, if there are any particular fields in which they are specialists.

4. It should be definitely understood whether the survey will be of the reconnaissance type, which is more or less of a superficial examination of virtually every administrative and financial operation, or whether it will be a more penetrating study.

5. It should be learned if the survey includes implementing any or all of the recommendations made. If executing the recommendations is not

involved in the transaction, it should be made clear that all processes, in any installation the institution is to make, be detailed where deemed necessary.

6. It should include financial and any other arrangements for either following up this survey after specified lengths of time, or else some program for the continuation of consulting service. This might be embraced in the original fee or on the basis of a retainer, but it is essential.

7. While normally there is constant liaison between some member of the survey team and the top installation officials, if the method of operating excludes such communications, there should be some system of interim reports from the firm of consultants. It is important that the president and business manager, at least, should be able to observe the methodology pursued and the progress of the survey.

Most colleges and universities invite competing bids on a contemplated survey. In order to make a quotation, the consultant or consultants may spend some time on the campus to obtain an idea of the dimensions of the task, also the difficulties that may present themselves if implementation is a part of the requirements. They may wish also to learn the president's desires concerning the form and contents of the final report. Each bidder should receive full cooperation from all levels.

There should be a written proposal that adequately covers what the firm of management consultants intends to do. This should be checked most carefully by the institution so that no controversies can ensue later on. This might include a quick physical review of the areas scheduled for survey for the purposes of evaluating the prices quoted and to verify that the coverage is satisfactory.

The proposal should include: (1) areas to be covered; (2) whether it is to be a reconnaissance survey or not; (3) if not a reconnaissance survey, the details by department of the penetration and the objectives they hope to achieve; (4) information on the technics to be employed; (5) data on any installation of the recommendations made; (6) nature of the report to be submitted; (7) proposal for "call backs" or continuing service; (8) approximate dates when the survey will commence and terminate; (9) information on the personnel selected to conduct the study, perhaps including a curriculum vitae of each.

While it would be advantageous to include herein some guidance concerning the cost of a survey, the difficulty in so doing is understandable. Different areas require different treatment and, hence, more or less professional time. Moreover, the technics pursued in one college may not be applicable to another, even when the problems appear to be alike. Similar departments or functions in colleges often have such substantial differences that the survey cost in one instance could not serve as a guide for another. Besides, there is considerable variance in the method of figuring charges by different firms of management consultants. There is a substantial range in the hourly rate charged for their personnel by the different consulting firms, and, there is even a variance within the same organization based on the experience and skill of the men selected for the project.

Usually the fee consists of a daily rate per man, which varies according to his seniority, experience or his partnership status—and the amount of overhead and other charges that are included in this daily rate. To this is added each man's per diem expense plus travel cost from the office in which he is headquartered. (The existence of a near-by branch may not lessen travel expense.) There is no complete uniformity among consultants but these are the only items usually invoiced. Office and other overhead allocations, the cost of compiling the final report, and even other charges are usually included in the daily rate of those sent out for the job. Ignoring for this purpose the differences in penetration, quality and experience, quotations have run from approximately \$8000 to \$23,000 for a management survey of all the major areas in a medium size liberal arts college.

Although virtually all management consultants compute their charges on a per diem basis and invoice accordingly, it is customary for them to name a maximal figure in their proposal. Quite often the actual invoicing is less, since they often protect themselves with a necessarily liberal estimate. On the other hand, where the consultants meet unforeseen difficulties and their expenses exceed the estimate, the college is safeguarded.

SELF-SURVEYS AND JOINT SURVEYS

This section propounds some questions which, when answered, should assist any university or college presi-

dent to decide whether a proposed survey should be made by the institution's own personnel, either as a unit or in combination with professional outside skill. If the latter is the choice, the direction is usually under the senior representative of the management consultants employed, who will assume over-all responsibility. The professionals, in consultation with the institution's members of the team, should blueprint the program, establish the procedures and methodology, and make the individual task assignments.

GROUND RULES

There are few ground rules to guide this type of joint endeavor, and much will depend upon the exigencies, the problems to be met, and the capabilities of the personnel. The president and business manager of the institution, however, should be informed of the general plans before they proceed to pass judgment on its practicability and adaptability to the needs of the institution. Also some system of interim reporting to them should be established. Most management consultants are willing to participate in this form of collaboration.

When the survey is to be conducted wholly by personnel from the institution's own staff, the following should serve as guidance, subject to alterations depending upon circumstances at the individual institution:

1. Assuming that the atmosphere is conducive to the project, lay the groundwork for board of trustee approval, and cooperation by both the faculty and noninstructional staff.

2. Finalize the selection of the personnel to conduct the survey. This should be predicated on such factors as diagnostic ability, tact, objectivity, courage, emotional stability, and perspective—as well as freedom from other duties for sufficient time to complete the project. Even with these qualities, the primary criterion is their acceptability by others in the institution with whom they will come in contact. An added advantage would be their capacity for learning and growth experience for future or continuing similar studies.

3. Organize a central survey committee if it is deemed desirable. A pitfall to be avoided is burdening this committee with too much responsibility or subjecting it to continuing reporting procedures. Preferably this group should deal only with mat-

ters that are institution-wide in scope. Ad hoc committees might be appointed if and when needed to assist the survey team where certain departmental problems make it advisable.

4. Translate the broad survey objectives into workable tasks which are properly defined and broken down into their component parts.

5. Develop effective survey methods, including plans for collection, sampling and analyzing; also testing where necessary. Determine the nature and extent to which questionnaires will be used.

6. Locate all responsibility and establish reporting procedures. This requires a decision on the nature and extent of interim reports as well as the form of the final report.

7. Establish priority of the areas to be surveyed.

8. Determine the departments or functions, if any, where the team may proceed with corrections or make installation.

9. Establish a time schedule, if desired. Also a timetable for conferences and/or feed-back of verbal progress reports as may be required.

10. Appoint individuals from central survey committee who will supply cooperative supervision, assist in formulating action strategies, and be in a position to solve certain problems of the team and maintain esprit de corps.

Unlike the professional surveys in universities and colleges, there have been relatively few so-called self-surveys, and these have been of a somewhat limited or different nature. Hence, they are not likely to prove of value to other institutions of learning, especially as their reports do not contain any data on implementation. Here we find the major pitfall of the self-survey, so that a No. 11 should be added to the preceding list of steps: "Implementation." This requires special discussion because, historically, too many reports, it seems, have ended their existence on officials' desks or in the library, permanently postponing the implementation that was intended when the survey was enthusiastically commenced. To obviate this, the report, when issued, might be promptly subjected to a number of steps such as the following:

1. Regain, if and where necessary, the support of various groups and key individuals involved in the recommendations in the report, so it will

receive sympathetic or at least objective consideration.

2. Separate the recommendations into policy and nonpolicy decisions.

3. Let top officials evaluate the findings and assign authority and time limit for implementation of all non-policy recommendations, except where there is a serious disagreement or conflict.

4. Establish a program and policy for prompt review of conflicts and controversial recommendations.

5. Establish a program for reporting when installations are completed. Also some feed-back later with data on the budgetary economies effected.

6. Establish a plan and a timetable, if feasible, for weighing recommendations that involve policy changes.

7. Establish a program and/or timetable for later review of recommendations which have merit but where action must be temporarily deferred owing to inopportune timing or to personnel problems.

These merely comprise a general pattern. Each institution will necessarily modify its program in accordance with its own exigencies.

While the survey team undoubtedly will be able to determine for itself the necessary sources of information, it might find helpful: (1) budgets, accounting statements, and statistical reports; (2) various reports of officers, boards, activities and agencies; (3) interviews with personnel on almost all levels; (4) inspection and observation of facilities and operating procedures, including related activities; (5) comparison with other colleges and universities, and with such other data as may be available; (6) examination of any procedural handbooks and/or similar data. Also, some management consultants, as a service, are willing to give limited assistance and guidance in self-survey projects.

The primary responsibility of the survey team is: (1) to gather *all* the facts required to make a recommendation; (2) to be certain in making recommendations that careful consideration has been given to all possible alternatives; (3) to endeavor to anticipate and evaluate any repercussions that may result from implementing the recommendations; (4) to make certain that the report is factually accurate and objective, that it is thorough and clear, yet succinct, and that it is constructive rather than unduly critical.

(To Be Continued Next Month)

Controversy at Harvard

concerns removal of Arnold Arboretum's library
and herbarium from Jamaica Plain to Cambridge

T. E. BLACKWELL

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UNDER THE PROVISIONS OF AN indenture dated March 29, 1872, trustees appointed by the will of James Arnold conveyed the property received by them (amounting to approximately \$100,000) to the Harvard Corporation¹ for the establishment of a permanent endowment, the net income to be used for "the establishment and support of an Arboretum, to be called the Arnold Arboretum, which shall contain, as far as practicable, all the trees, shrubs and herbaceous plants, either indigenous or exotic, which can be raised in the open air at the said West Roxbury . . . and to the support of a professor, to be called the Arnold professor, who shall have the care and management of said Arboretum, subject to the same control by the said president and fellows . . . , and who shall teach the knowledge of trees in the university which is in charge of the said president and fellows. . . ."

By 1879, the Arnold endowment had increased to \$150,000 and Charles Sprague Sargent had been appointed the Arnold professor, a position which he held until his death in 1927. Under his leadership an outstanding library and an excellent herbarium were assembled at the West Roxbury location now known as Jamaica Plain. Before Professor Sargent's death, and subsequently, friends of the Arboretum, by gift and bequest, increased the book value of the Arnold endowment to more than \$4,000,000.

In June of 1945, Prof. Irving W. Bailey of the department of biology at Harvard University prepared and submitted a report entitled "Botany

and Its Application at Harvard," usually referred to as "the Bailey Plan." This was a proposal that the nine independently endowed institutions at Harvard concerned with botany coordinate their activities. The Bailey Plan was approved by the Harvard Corporation in 1946. By 1949, as preliminary measures were taken to implement the plan, their effect upon the status and work of the Arboretum became apparent to certain members of the arboretum visiting committee.²



They retained J. W. Farley and Robert G. Dodge as counsel to advise them as to whether implementation of the Bailey Plan would violate the trust upon which the Arboretum's property and funds were held by the Harvard Corporation. In an opinion dated March 1, 1952, Messrs. Dodge and Farley stated that there were serious questions as to the legality of the

Bailey Plan as it applied to the Arboretum and recommended that a judicial determination of all of the legal issues be sought.

The Harvard Corporation, early in 1949, as a result of the criticisms of the arboretum visiting committee, requested the board of overseers to review the entire controversy. The board appointed a special committee of its members, and, in November of 1952, submitted its report, which formed the basis of the action of the Harvard Corporation at its meeting of Jan. 19, 1953. The provisions of the Bailey Plan, as they applied to the Arboretum, were rescinded, but the corporation declared, by formal resolution, that the removal, to a central building in Cambridge, of the main body of the library and herbarium of the Arboretum relating to research, would be in the best interests of the Arboretum and would promote the purposes of its endowment.

The books, approximately 8000 in number, and the specimens to be left at Jamaica Plain were those required for a working library and museum. The herbarium at Jamaica Plain is still the largest collection of its kind in the United States. The vote also provided that a proportionate share of the expense of maintaining and operating the new Cambridge building should be borne by the Arboretum's endowment, the amount to be determined in accordance with Harvard's standard accounting procedures.

Both before and after this action of the corporation, counsel for the arboretum visiting committee repeatedly urged the members of the corporation to file a petition with a court of equity for a judicial determination as to whether the removal of a major por-

¹The Harvard Corporation consists of the president and treasurer of Harvard College and five fellows, who serve without limit of time and appoint their own successors.

²The arboretum visiting committee is one of a number of committees appointed by the board of overseers of Harvard to review the activities of the various schools and departments of the university. Harvard has two boards, i.e. the corporation and the board of overseers.

tion of the library and herbarium to Cambridge would be in the best interest of the Arboretum.

The following statement by the president and fellows was published in the *Harvard Alumni Bulletin* of Dec. 12, 1953:

"We understand that, as a matter of law, instructions will be granted in Massachusetts only when the trustee has 'real and serious doubts as to his duty.' We have no such doubts as to our duty in respect to matters covered by our resolution of Jan. 19, 1953. On the contrary, we are firmly convinced that the administration of the Arboretum and of its endowment in accordance with that resolution is proper and is within the terms of the endowment and the scope of our discretion as trustee."

When this decision of the Harvard Corporation became known, counsel for certain members of the visiting committee and others, acting as individuals, decided to take action. Under Massachusetts law, when a trustee declines to file a petition for instructions, persons interested in the trust may request the attorney general of the state to file a petition on his own initiative or, more frequently, to permit the use of his name by "relators," i.e. individuals willing to assume the cost of the suit.

SUBMITS OPINION

When this request was received by the attorney general of the state of Massachusetts, he asked his assistant, Harris J. Booras, to review the matter and submit an opinion. The Booras opinion, dated July 2, 1953, closed with these words:

"There is no legal breach of trust. To permit the use of the name of the attorney general in cases like the present, where it is clear to him the trustee is acting in good faith and within the bounds of reasonable judgment and sound discretion, simply because others, equally in good faith, differ with the decision of the trustee, would open the door to unreasonable and vexatious litigations. Accordingly, by the direction of the attorney general, the application is denied."

Ten alumni, eight of whom were members of the arboretum visiting committee, brought suit in the supreme judicial court of Massachusetts for an order directing the attorney general to reconsider his decision,

(Continued on Page 48)

Scale Models

aid board members and public to visualize
new buildings on the old familiar campus

NORMAN P. AUBURN

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LAY MEMBERS OF COLLEGE BOARDS of trustees often find blueprints of proposed new buildings difficult to decipher. Sometimes they get a fleeting conception of what a new structure will look like as they study colored perspectives and renderings on which architects lavish countless hours, but many find it virtually impossible to visualize the third dimension as they scrutinize a sketch or plan.

To solve this problem for his fellow board members, E. J. Thomas, president of the Goodyear Tire and Rubber Company, and chairman of the building committee of the board of directors of the University of Akron, adopted the device he uses constantly in his business. He instructed his company's engineering department to construct a scale model of present and projected buildings on campus.

The scale model required 500 man-hours to construct and is valued at

\$2500. It is made of plastic, wood, asphalt fiber, and grip tread. It faithfully portrays not only the present campus buildings but also the architect's conception of projected ones. In its three-dimensional form, board members can determine whether changes should be made as the architects proceed with their plans.

One of the interesting features is the interchangeability of the model. If projected buildings are modified in design, the model is changed.

In addition to being helpful to board members, the scale model is a splendid public relations device for the university. It has been used advantageously in fund raising campaigns, at alumni meetings, and student gatherings. Completely portable, it has been placed on display at civic meetings and public exhibitions. It has turned out to be an excellent "conversation piece" for us.

Trustees and administrative officers of the University of Akron study campus model. Left to right: L. P. Hardy, financial vice president; E. J. Thomas, chairman, building committee; N. P. Auburn, president; C. J. Jahant, member of building committee.



and thus permit the controversy to be reviewed by a court of law.

The decision of the court,³ on the question of whether it could review an executive decision of the attorney general, was handed down on Feb. 11, 1955, by Chief Justice Qua as follows:

"In our opinion the decision of the attorney general not to permit the use of his name in a suit against the college for alleged breach of a public charitable trust was a purely executive decision which is not reviewable in a court of justice. The duty of taking action to protect public charitable trusts and to enforce proper application of their funds rests solely upon the attorney general as the representative of the public interest."

OPPOSE HARVARD'S PLAN

If one may judge the intensity of interest in this controversy by the volume of published material, it is clear that some friends of Harvard will be concerned with this problem for many months to come. The Association for the Arnold Arboretum, Inc., has been organized as a nonprofit Massachusetts corporation to oppose Harvard's present plan for the Arboretum. According to a statement published by the association, this group, as of March 31, 1955, "had 1032 members from 41 states, the District of Columbia, and Canada. The membership is widely representative of those interested in preserving the Arnold Arboretum as a distinguished horticultural-botanical institution and of those concerned with the reputation of Harvard University as a guardian of trust funds. . . .

"To many it seems intolerable that, when important questions of legal breach of trust have been raised by eminent lawyers, no way has been found to obtain a judicial ruling through the only means whereby these questions can be determined, *i.e.* through a hearing on the merits by the courts of Massachusetts.

"It seems certain, therefore, that the effort to obtain a judicial hearing on the merits of the breach of trust question will continue. . . ."

The Corporation of Harvard University published its version of the issues involved in the Arnold Arboretum controversy in a pamphlet dated July 1, 1954. The following is an excerpt from this statement:

"The duty of the Harvard Corpora-

tion, as of any charitable trustee, is to do what, in its considered judgment, will best promote the purposes for which funds are given it, in accordance with the terms of the gift, and on the basis of careful inquiry; it cannot abdicate this responsibility any more than it can hand over its duties to the courts. There is no more certain way to wreck an institution devoted to the ends of education and research than to allow outside pressures to steer it away from the true line of advance. Harvard has often stood firm against pressures of this sort from government and from business. It can do no less when those who are concerned happen to be members of the Harvard family. It cannot be pleasant for the corporation to find that a course which it considers clearly advantageous to the Arboretum is regarded with disapproval by some of the Arboretum's generous friends, but the real breach of a moral trust on the corporation's part would be for it to put aside what it firmly believes to be in the best interests of the Arboretum."

How many colleges conduct a periodic audit and analysis of the administration of the endowments entrusted to their care? Have all of the restrictions imposed by the donors been scrupulously observed? To what extent can the administrators of endowment funds be relied upon to sit in judgment upon their own actions and decisions? Justice Story, back in 1819, in the famous Dartmouth College case,⁴ remarked that, since the administrators of educational and charitable corporations ". . . are liable . . . to deviate from the end of their institution . . . there shall somewhere exist a power to visit, inquire into, and correct all irregularities and abuses in such corporations and to compel the original purposes of the charities to be faithfully fulfilled."

This power of visitation in our Anglo-American system of jurisprudence has been defined⁵ as:

"The act of a superior or superintending officer who officially visits a corporation, college, church or the like, to inspect the manner in which it is conducted, and to see that its laws and regulations are observed."

The right of a donor, his appointees,

⁴Trustees of Dartmouth College v. Woodward, 4 Wheat. 518 (1819).

⁵Webster's New International Dictionary, G. & C. Merriam Co., Springfield, Mass.

and his heirs to visit, inspect and correct abuses in the administration of endowments established by his philanthropy is an ancient legal concept. Many of the early American colleges established permanent boards of visitation, to review and report periodically upon the actions of the governing board and officers of the institution. The board of overseers of Harvard is an example of this power of visitation in operation today. Harvard is indeed fortunate to have such a distinguished group of citizens to pass upon its administrative actions. However, many colleges and universities have no such organized review of their procedures and decisions.

QUOTE FROM TEXT

An authoritative text⁶ has this to say:

"The exact status of the doctrine of visitation in modern American law is not perfectly clear. It seems a relic of earlier times which has not been expressly abolished by statute in most states and has been occasionally recognized by decision. It is not believed, however, that it is a feature of charitable trust administration which is either practicable or desirable under present conditions. It would seem that the visitatorial power should be separated from the managerial power. No genuine check or control on the administration of the charity will come from the very administrators themselves.

"In the case of a business corporation the officers are kept in the straight and narrow path by virtue of the diligence of the stockholders in watching the directors and officers and in enforcing their rights. While there are no stockholders in the case of a charitable corporation, the attorney general of the state is capable of enforcing the rights of the public and holding the managers to strict performance.

"In recent years a feeling has arisen that the attorney general does not have sufficient information regarding the existence of charitable trusts and their status. An effort has been made in some states to secure a complete roster of charitable trusts for the office of the attorney general, to give him frequent reports on the status of the trusts, and to stimulate him to activity in procuring enforcement."

⁶Bogert, G. G.: The Law of Trusts and Trustees, Vol. 2A, para. 416, Vernon Law Book Co., Kansas City, Mo., 1935.

³Ames v. Attorney General, 124 N.E. 2d 511.

Right: At the University of Minnesota a year's supply of canned goods and staple groceries are stored in the general storehouse. The COVER PICTURE shows member of the purchasing department staff checking delivery of foodstuffs to warehouse.



APPROXIMATELY HALF A MILLION institutions in the United States can be classed as food service units. They include a multitude of classifications all the way from a small hamburger shop to the Pump Room in the Ambassador Hotel.

One food service consultant who has been servicing institutions for more than 25 years has indicated that the current institutional food buying effectiveness is less than 50 per cent efficient. This is a startling statement in view of the fact that from 40 to 45 per cent of the menu price in most commercial eating establishments represents food cost.

Food distributing organizations catering to the institutional field get requests every day for quotations; for example, on 40 cases of No. 10 tomatoes, or 15 cases of No. 10 corn, or 10 cases of No. 10 pears, or 10 cases of No. 10 string beans. How can a supply house intelligently quote a price on this type of request?

In the case of tomatoes, does the institution want fancy, extra standard, or standard, and what is the minimum drained weight that will be acceptable? How will they be used? Stewed, in cookery, or on a vegetable plate? What will the supply house offer in this case?

What style corn does the buyer have in mind—whole grain or cream style? Then, of course, there are the numerous varieties and grades to consider, all depending upon the use with a reflection in price.

And the pears! Will they be used for salads or desserts? What style—halved, quartered, sliced or whole? Would Bartlett or Kieffer best fit the needs, and what about grades, sirup density, and counts?

These are a few of the questions that run through the minds of supply firms as they try to quote on requests of this type. Is it fair to the suppliers to expect them to guess as to what is needed? Had sufficient information been given by the buyer, the various suppliers would know the exact items

needed and the buyer would benefit through competitive bidding.

What is wrong? Certainly there are no secrets in the food industry, so why are so many institutions doing a poor buying job?

The answer to the whole institutional food buying problem lies with individual food buyers. The first thing they have to do is to *start asking questions!* They can begin with their suppliers, especially with the large food distribution houses who employ a staff of specialists to interpret the requirements of institutional food operations and can tell each individual institution what will best fit the needs of its operation. Why not take full advantage of the services of these men? You couldn't duplicate them

on your payrolls for thousands of dollars, and their knowledge is available just for the asking.

A. A. Froome states in his book on "Institutional Food Buying" that there is nothing startling or complicated about effective food buying. It is expressed in these five basic steps:

1. Find out what the food industry offers.
2. Determine what best fits your needs.
3. Compile written specifications covering your selections.
4. Work out a buying procedure and decide on a course of action.
5. Check and inspect all deliveries.

Each step is fundamental. In our schools and colleges, who is better qualified to buy foodstuffs than the

Should the Purchasing Agent Buy Foodstuffs?

CLINTON JOHNSON

Director of University Services, University of Minnesota

purchasing agent? Isn't centralized purchasing control and responsibility desirable for any of our institutions?

A trained, conscientious purchasing agent usually is better qualified to work out a buying procedure and decide on a course of action to accomplish a really effective food buying program than the dietitian or food service manager. Isn't it as reasonable to expect a purchasing agent to buy foodstuffs as it is for him to buy electronic, x-ray or laboratory equipment, or a hundred and one other items of equipment or supplies?

Some of the usual reasons given for centralized purchasing are:

1. The standardization of items for all departments.
2. The combining of all requirements for quantity prices.
3. The elimination of duplication of effort which is always present when more than one department is doing the buying.
4. The practice of accepted procurement principles with all the advantages of competition.
5. Proper relations and fairness with vendors.
6. A definite system of audit and expenditure controls.

Certainly, every one of these reasons applies to the acquisition of foodstuffs as well as for other items and products.

LOCAL CONDITIONS AFFECT BUYING

Local conditions will determine and affect food buying more than they will other commodities. Because the buyer is dealing with perishable items, the size of the school and the local market area will determine the degree of centralization that he can employ.

The dietitian and food service manager are a very important part of the team. To a large extent they will find out what the food industry offers, determine what best fits their needs, prepare written specifications covering their selections, sometimes with assistance from the purchasing department, and then file requisitions with the purchasing agent. The purchasing agent will work out the buying procedure according to the policy of the institution. The proper checking and inspection of all deliveries will fall mostly on the food service people except where large central storage departments are used.

You cannot divorce one member of the team from the other, but to do as efficient a food buying job as possible,

it means coordinated effort by everyone involved.

At the University of Minnesota, we employ centralized purchasing of foodstuffs, with one small exception. Each fall the university places orders for a year's supply of canned goods and staple groceries, which are stored in our general storehouse. However, before any canned goods are ordered, the university purchasing agent conducts a "testing bee" in one of the kitchens. This session is attended by all of the dietitians and food service directors, who test and check all canned goods (with the labels removed) as to grades, pack, color, varieties, count and other standard characteristics. Price, of course, also must be considered. This means that we do not always buy the best grade of pears, peaches or beans that are available on the market, but we do buy the best grade available that will fulfill our needs in accordance with the size of our pocketbook.

All participants in the "testing bee" record their opinions, which are later tabulated. Based on these results, the purchasing agent writes detailed specifications on the exact needs of the food service units and submits them to the various purveyors for quotation. On the basis of the low bid that meets the specifications, orders are issued by the purchasing department for the coming year's need for canned goods.

By following this procedure, the food service staff assists the purchasing agent in acquiring the quality of product it wants to use. The dietitians in the residence halls and food service units from then on merely place orders with the general storehouse by telephone, and deliveries are made weekly. As the food service staff orders from the general storehouse for its individual needs, it knows in advance the exact quality of the product it will be receiving as it had a hand in selecting it.

The same procedure, on a smaller scale, is followed when determining the brand of coffee to be used. The testing of coffee usually is done several times a year, and orders are placed on a quarterly basis. Here, again, opinions are tabulated and the brand of coffee ordered is based on the majority vote of the food service staff making the tests.

At Minnesota we have a cold storage department where we process all of the fresh meats, fish, butter, cheese, frozen fruits and vegetables, and all

the fresh fruits and vegetables that the kitchens need. Each Wednesday the cold storage plant submits to the purchasing department its needs (except for fruits and vegetables) for the next week, indicating the specifications desired. On Thursday, the purveyors go to our purchasing department to submit their quotations and, as a result, orders are issued the same day to the successful bidders for the next week's supplies.

Some of the fresh fruits and vegetables, such as lemons, oranges, grapefruit, apples and potatoes, also are purchased on a weekly bid basis. The cold storage plant notifies the purchasing department of its needs each Monday. These needs are immediately mailed out by the purchasing department to the various suppliers requesting quotations, which are due back on Thursday morning. The orders for the following week's supplies are mailed out Thursday afternoon.

MEAT CUTTING DONE CENTRALLY

The cold storage department processes all meats ready for use as ordered by the residence halls, food services, Student Union, and the university hospitals. This means that all meat cutting is done centrally with no meat cutters appearing on the payroll of our various kitchens. The dietitians place their orders by telephone one day in advance of their needs. With the exception of week ends, daily deliveries are provided.

At Minnesota the only foodstuffs that are not acquired by the purchasing department are the fresh fruits and vegetables, such as berries, melons, rhubarb and asparagus, that are available in season at the farmers' market. Each morning during the summer months the cold storage manager or his assistant goes to the farmers' market and buys the needs for the day. In these transactions, it is necessary to use cash, so there actually is no control by the purchasing department over this type of negotiated buying.

We find not only that it is more economical to buy and process our meat products through a central plant but that it gives us a degree of portion control and ensures consistently better quality. In addition to reducing our over-all payroll, we feel that we have an added safeguard by having qualified men inspect all fresh food products delivered to the university, ensuring that all deliveries are according to specifications. A markup

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of 7 to 8 per cent covers the operating costs of the cold storage department.

We insist that the cold storage department never deliver any food products to our kitchens that may be at all questionable. If there is a loss through spoilage, it must be absorbed by this central processing unit.

We also operate a milk and cream department. This plant was established to provide milk for campus consumption at the lowest possible price and to make possible the control of our milk supply. Into this department comes the raw milk, a small percentage of it from university herds, the rest from a farmers' cooperative. The milk and cream are pasteurized, homogenized and bottled for our food service units. Deliveries are made every day. The milk from the commercial suppliers is acquired on requisition and purchase order through the purchasing department. This usually is only a mechanical process as the price of raw milk for the area is determined by the federal market administrator and is received in the month following delivery. In other words, the price we pay for milk that we have processed and sold during the month of June, for example, is not known by us until the month of July. As a result, the selling price of our milk always lags one month behind the actual market price.

We had occasion to check on the milk prices paid by three other colleges in the Twin Cities in order to get a comparison with the price we were charging our food service units. Our price was low in every instance and, based on our volume, we actually saved our food service units \$62,561 in a year over what they would have had to pay to regular milk companies for the same products. We feel that these savings justify our being in the milk processing business.

We also manufacture our own ice cream. By so doing, we feel that we get a superior product at a lower cost.

If a food service unit desires an item not carried in any of the central stores, a separate requisition is filed with the purchasing department. After an order has been issued, the purveyor delivers these products directly to the department involved.

Billings from the general storehouse, the cold storage department, or the milk and cream department are all made on interdepartmental vouchers. Perpetual inventory records are maintained in the general storehouse, and

in the cold storage department and the milk and cream department monthly physical inventories are taken.

When preparing a food buying program, one must consider the medium and smaller sized operations for they constitute at least 90 per cent of the institutional field. Therefore, a simple concise plan is more valuable than an elaborate one that requires more time with many details. The same general procedures that apply to the larger institutions also apply to the 90 per cent group.

Some of the more important items in any buying plan, keeping in mind the five basic steps mentioned previously to ensure effective institutional food buying, are listed herewith:

1. Give some one individual buying authority and responsibility. If some buying is delegated to a subordinate, then responsibility for this phase also must be assigned. The two elements must function together.
2. See that person designated for this job gets a complete picture of the food operation so that he can evolve an efficient purchasing plan.
3. Consult with the dietitians and food service directors and the representatives from the suppliers to find out what the food industry offers in order to determine what best fits your needs.
4. Write specifications upon the selections that have been decided upon and soon you will have detailed specifications for most food products used in your food service operations.
5. Determine quantities on the basis of needs, storeroom facilities, and other local variables. Consult established sources of supply before placing orders or contracts.
6. Check and inspect all food deliveries against specifications.
7. Develop a simple purchase record and inventory control system.
8. Keep an open and inquisitive mind, always seeking to improve your system of food operation. The results will be noticed in a more economical operation and efficient management. Don't hesitate to ask questions.

No matter how well organized a purchasing department may be or how carefully its system and internal procedures are planned, efficient and effective procurement can be accomplished only to the extent that those who use the purchasing department coordinate their own methods to conform with the buying procedures and help to make them workable.

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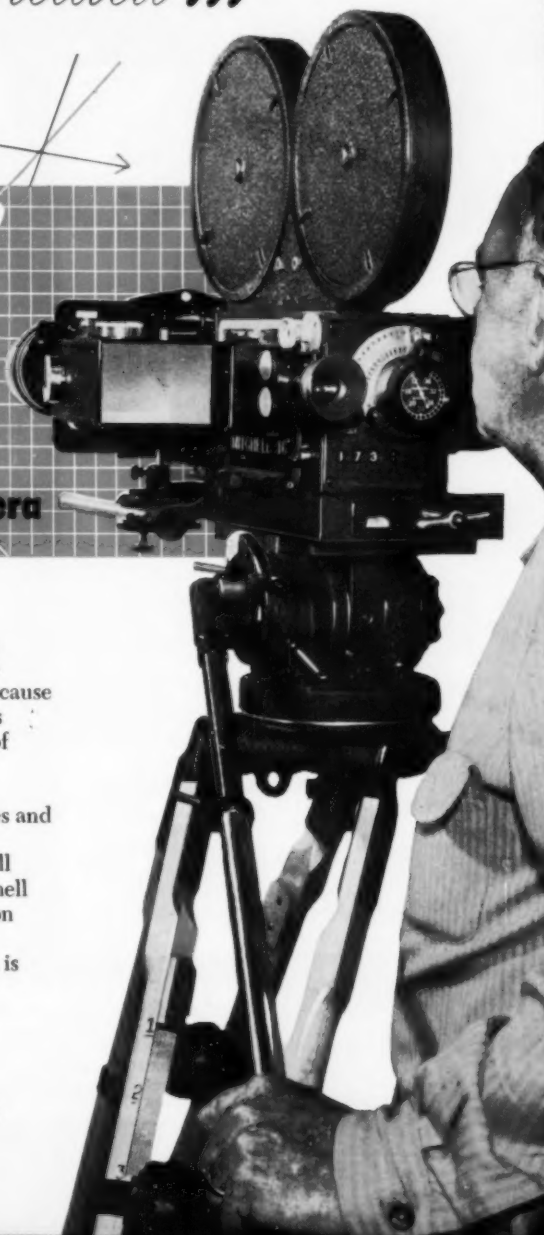
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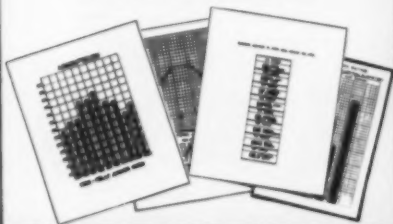
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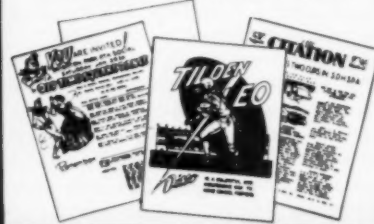
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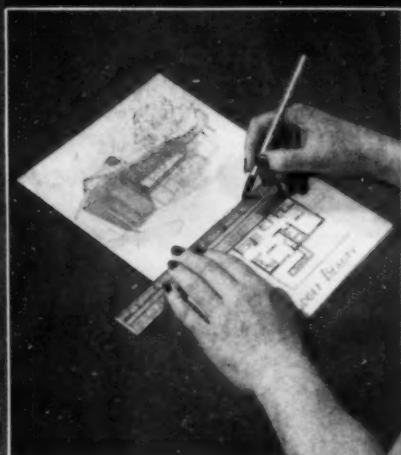
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NEWS

**Technical Institutes Form Foundation . . . New York School Must Register
as Communist Front . . . Rulings in Segregation Cases . . . Cornell Builds
Apartments for Married Students . . . Finances Close College in California**

Financial Problems Too Difficult; College Closes

ROLLING HILLS, CALIF. — John A. Howard, president of Palos Verdes College, announced August 15 that the trustees have reluctantly voted to close the college before the fall semester begins.

The financial problems that beset private colleges have proved too difficult for the small eight-year-old institution to surmount.

In his statement to the press, Mr. Howard said: "It is difficult to declare an end to an institution to which so many people have devoted their efforts and resources. We are most sorry to terminate the distinctive and widely known educational program, and to release the able, devoted faculty and staff. However, each year we have had to raise \$50,000 in gifts to meet the operating budget and these gifts have been increasingly hard to find. After extensive efforts failed to find new sources of support for our program the decision to close was mandatory."

The college office will remain open for at least six weeks to assist enrolled students in their plans to attend other colleges.

Study-Work Plan Ends at Valparaiso University

VALPARAISO, IND. — A two-year experiment in industry-education cooperation has been discontinued at Valparaiso University, according to President O. P. Kretzman.

A furniture plant, operated by Paul H. Brandt, alumnus-president of the board of trustees, has been manned entirely by Valparaiso students working on a part-time basis.

Dr. Kretzman said: "The results, though they have been good, do not seem to justify the large investment

and effort required to operate the factory." The plant produced outdoor picnic furniture. Dr. Kretzman indicated that other job help will be made available for students that have been working in the plant.

Elect Officers of New Technical Foundation

BOSTON.—Initial meeting and election of trustees of Technical Institute Foundation, Inc., recently formed national organization comprised of non-profit, independent technical institutes, was held recently at Wentworth Institute here.

Elected were: president, Karl O. Werwath of Milwaukee School of Engineering; secretary, Kenneth R. Miller of Ohio Mechanics Institute, Cincinnati; vice president and treasurer, H. Russell Beatty of Wentworth Institute; trustees, Adm. Logan Ramsey of Spring Garden Institute, Philadelphia; Eugene Wood Smith of Cogswell Polytechnical Institute, San Francisco; Sinclair Weeks Jr. of Wentworth Institute's board of directors; John H. Murphy, Milwaukee attorney; Perrin G. March, president of Cincinnati Shaper Co., Cincinnati, and George W. Pracy, San Francisco water commissioner.

Objectives of the foundation are to disseminate information on technical institute education, develop curriculums and schools, raise funds to promote technical institute higher education in the United States, provide scholarships, grants and loans to worthy students, and improve status of faculties.

Charter members of the foundation are Wentworth Institute, Boston; Ohio Mechanics Institute, Cincinnati; Spring Garden Institute, Philadelphia; Cogswell Polytechnical Institute, San Francisco, and Milwaukee School of Engineering, Milwaukee.

Rules Alabama University Must Admit Negroes

BIRMINGHAM, ALA.—Federal Judge Hobart Grooms ruled recently that the University of Alabama must open its doors to all Negroes scholastically qualified to pursue courses at the state school.

The decision followed by two days a similar ruling by the same jurist granting two Negro women an injunction restraining the university from rejecting their application for admittance solely because of race.

According to newspaper reports, university officials had no comment. Since the original decision, Oliver C. Carmichael, president, has refused to discuss ramifications of the ruling with the press. The suit was the first test of segregation laws in the South since the Supreme Court's ruling in May 1954 outlawing the practice in public schools.

Kentucky Official Gives Ruling on Segregation

FRANKFORT, KY. — W. Owen Keller, assistant attorney general, stated in an official opinion recently that the state law requiring segregation in schools had been destroyed by Supreme Court decisions and is no longer effective.

It was the first time an official of the state has ruled on the status of the 51 year old law since the Supreme Court's historical decision of 1954 and its order earlier this year implementing that decision.

Tennessee Plans Gradual Desegregation

NASHVILLE, TENN. — The Tennessee Board of Education recently adopted a plan calling for gradual desegregation in Tennessee state col-

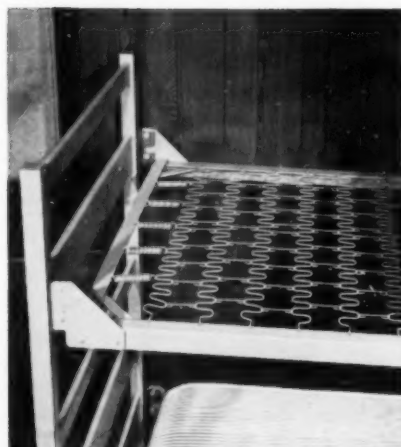


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NEWS

leges and the Agricultural and Industrial State University for Negroes. The action of the board of education is subject to approval by the federal district court.

The action resulted from a suit filed in federal court at Memphis by five Negroes seeking admittance to Memphis State College. The suit has no direct application to public schools, state officials asserted, maintaining that such schools are under the control of city and county school boards.

New York School Called Communist Front

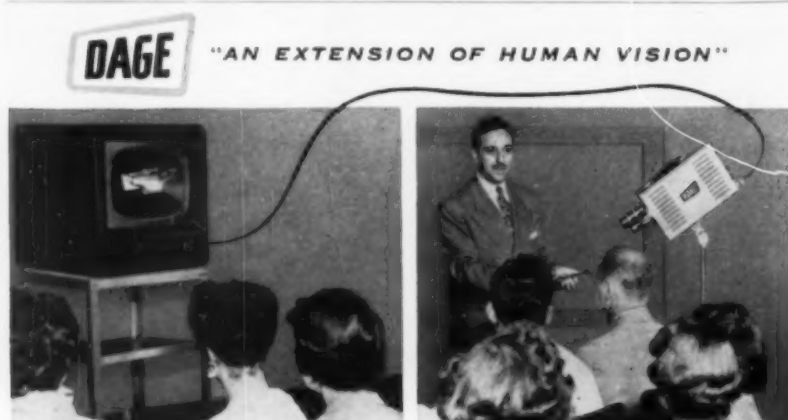
WASHINGTON, D.C. — The Subversive Activities Control Board recently ruled that the Jefferson School of Social Science in New York was a creature of the Communist party.

The ruling by the Subversive Activities Control Board indicates that the school must register annually with the attorney general. It must label all its literature and broadcasts as "spon-

sored by a Communist-front organization." Its officers and organization personnel may not apply for or use United States passports. Report of the board stated that Dr. Howard Selsam has been director of the school since it was first organized. According to the Subversive Activities Control Board, he was suspended from his position at Brooklyn College in 1941 after his refusal to testify before a state legislative committee.

The Subversive Activities Control Board stated that the board of directors of the Jefferson School of Social Science had been approved by the Communist party, "the great portion of which were party members or functionaries, and that the board has been, in its majority, and is today, in its entirety, composed of Communist party members or functionaries."

Throughout the testimony, Harry Sacher, New York lawyer representing the school, made academic freedom the paramount issue in his case. He held that requiring the school to register is an infringement on academic freedom.



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Build Garden Apartments for Cornell Married Students

ITHACA, N.Y. — Construction of a 96 family apartment colony for Cornell's married students began last month.

John E. Burton, vice president for business, said the project will have 12 one-story garden apartment buildings, erected on a site where war surplus barracks for men students stood until their razing last spring. Completion is expected by the middle of the academic year.

Cost of buildings and equipment is estimated at \$825,000. The development will be self-amortizing from modest rentals.

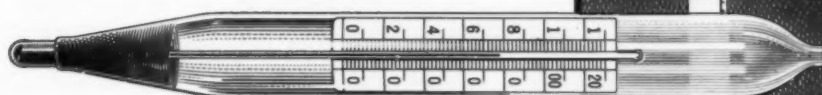
The project will give the university permanent housing for married students for the first time. By last count Cornell had 936 married students out of an enrollment of 9600 students on the Ithaca campus.

The new apartments will be of contemporary design, built of block with brick veneer and having moderately pitched roofs. Existing water and sewer installations from the temporary dormitories for men will be adapted.

Of the 12 buildings, eight will be devoted to three-room apartments and

NEW PRICES

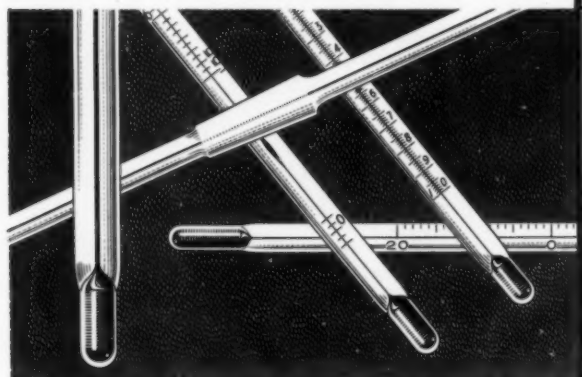
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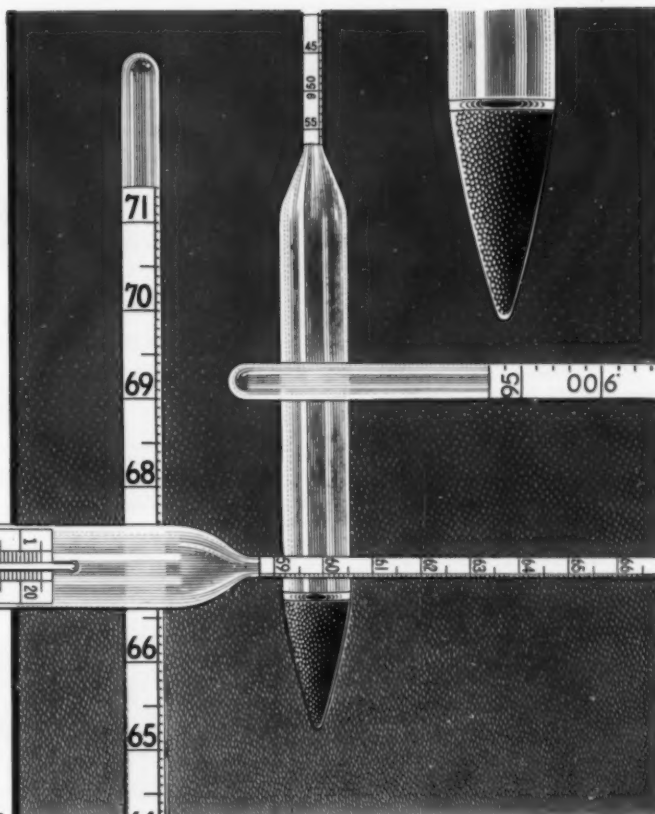
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four to the two-room type. Each building will house eight unfurnished apartments. There will be four laundries for the project. Area for play and appropriate landscaping also are planned.

A two-room apartment will have a combination living-dining room with recessed and screened kitchen unit, and a bedroom and bath. The three-room apartment has two bedrooms.

In planning the project, M. R. Shaw, director of Cornell residential

halls, and members of his staff studied married student housing communities at a number of midwestern university campuses.

James W. Driscoll, manager of housing in the residential halls office, will be in charge of the completed apartments.

Requests Repeal of Law on Teaching Evolution

WASHINGTON, D.C. — The American Civil Liberties Union recently

requested Tennessee's Gov. Frank G. Clement to take steps to repeal the state's law against the teaching of evolution in state schools.

It made the plea on the 30th anniversary of the celebrated Scopes trial, when the law was upheld following the famous debate between William Jennings Bryan and Clarence Darrow.

Patrick Murphy Malin, executive director of the American Civil Liberties Union, urged repeal of the statute on the grounds it interferes with "the freedom of thought and speech" guaranteed in the Constitution. Such an action, he wrote, "would be a unique contribution to the effort to reemphasize the significance and meaning of the First Amendment at a time when the conflict between democracy and totalitarianism has strained our own belief in the active exercise of civil liberties."

\$10,000 Grant for Survey on Teachers' Tenure

NEW YORK. — Columbia University is beginning a study of the law and practice that governs the employment of teachers in higher education in this country as the result of receiving a \$10,000 grant from the Fund for the Republic.

The legal aspect of the survey will deal with the effect of state laws, administrative decisions, and contract terms on a teacher's tenure. A review also will be made of the operating practices at the regent or trustee level in colleges and universities.

Foundation Opposes Congressional Report

PASADENA, CALIF. — Dr. Dean Rusk, president of the Rockefeller Foundation, stated recently that the foundation will continue to grant scholarships for inquiry into controversial subjects, despite criticism by a congressional committee.

He stated that these were the reasons for opposing the congressional report:

"We had brought objections in principle to the restrictions on free scholarships and free speech involved in assigning to us this responsibility (for the views expressed by scientists or scholars supported by foundations).

"The object of a grant is the unimpaired thinking of the scientist or scholar. Censorship would frustrate

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the principal purpose of the grant itself.

"Grants are made before a study is made—and we are skeptical of proposals where it appears the answers are known in advance by the investigator.

"The foundation is ordinarily only one among several contributors to research and scholarship—utter confusion would result if responsibility flowed back to the channels of financial support.

"To us the most decisive objection was that the assignment of responsibility would require the exercise of a power which we did not and should not be permitted to have, a power contrary to the long established public policy and one which would be deeply injurious to a democracy."

Name Henry M. Wriston Executive Director of American Assembly

NEW YORK.—Dr. Henry M. Wriston, retiring president of Brown University and chairman of the Secretary of State's Public Committee on Personnel ("Wriston Committee"), will become executive director of the American Assembly on October 15, according to an announcement by Clarence Francis, chairman of the assembly's national policy board, and by the business school dean, Courtney C. Brown, Columbia University's representative in the administration of the assembly. Dr. Wriston will assume his directorship immediately after the eighth American Assembly, which is being held at Arden House, Harriman, N.Y., October 13 to 16.

The assembly was founded in 1950 by President Eisenhower when he was president of Columbia. It is a non-partisan, educational organization that conducts conferences on current national problems. It brings together from both political parties influential representatives of business, labor, agriculture, education, government and other walks of American life, representing a variety of points of view.

Facts and findings of these conferences are disseminated on a national scale and, because they represent the concurrence of diverse interests, have had significance for national policy. A by-product of the assemblies is the mutual respect and understanding that



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have emerged from the discussion of conflicting points of view.

In addition to this post, which will be his principal activity, Dr. Wriston will remain as president and a director of the Council on Foreign Relations and will continue to serve as a trustee of the Council for Financial Aid to Education. He is the fourth executive director of the assembly. Other directors have been Philip Young, chairman, U.S. Civil Service Commission, Edwin T. Gibson, and Dean Brown.

Two Chicago Optometry Colleges Consolidate

CHICAGO.—Two institutions of optometry, the Chicago College of Optometry and the Northern Illinois College of Optometry, have been merged to form the Illinois College of Optometry, according to Dr. Eugene W. Strawn, president of the new institution.

The merged institution will now be located at 3241 South Michigan

Avenue in Technology Center, the campus of the Illinois Institute of Technology.

Dr. Richard Feinberg, former president of the Northern Illinois College, has been appointed vice president and dean; Dr. Morton L. Abram, former president of the Chicago College, has been named vice president and business administrator of the new institution.

Predict Enrollments in Illinois Colleges Will Double by 1972

SPRINGFIELD, ILL.—The state of Illinois faces the problem of providing for doubled enrollment in its publicly supported colleges within the next 17 years or of taking from thousands of capable and eager young men and women the opportunity for college training.

This conclusion is taken from a presentation of actual and probable college enrollments in Illinois through 1972 prepared and issued recently by the joint council of higher education of the state supported schools of Illinois.

Students who will attend Illinois colleges in the next 17 years already have been born and counted. By 1971 there will be 300,000 more college-age young people in the state than now. If present trends continue, it is expected at least 5 per cent more of them will go to college. Even then the Illinois percentage will be only 28 as compared to already reached percentages today in California of 30, New York 31, Oregon 32, Colorado 33, and Utah 38.

Since in Illinois only one-third of college students now are attending public institutions as compared to one-half nationally, it also is anticipated that, when private institutions become filled to capacity, public institutions will receive an increasingly greater share of the demand.

The bulletin shows that while state appropriations for higher education have grown from under \$9 million in 1921 to \$88 million in 1953, the change when adjusted to allow for inflation and presented in terms of 1939 dollars is from 11½ million to 45 million. In the same time enrollments rose from 14,000 to more than 56,000.



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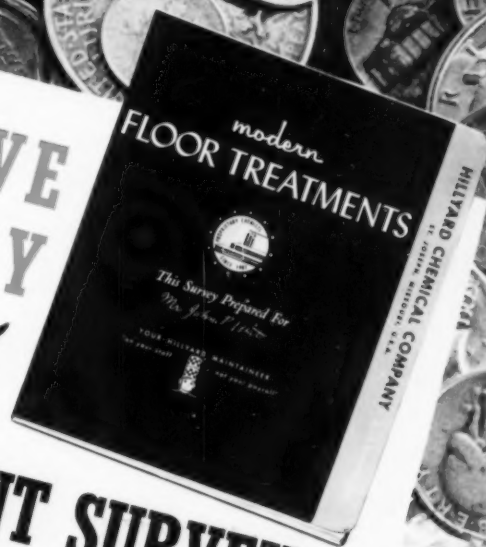


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Veterans Administration Clears Up Points on Korean G.I. Bill

WASHINGTON, D.C.—Veterans Administration has ruled that "conditional" discharges—granted to servicemen only to enable them to change military status—need not bar them from building up further entitlement to education and training under the Korean G.I. bill.

Instead, they may continue to accrue G.I. training time up to the end of the period they originally were obligated to serve, usually two years in the case of those drafted and three years for those who enlisted.

The V.A. ruling also cleared up two other points: when men and women on active duty must begin their G.I. training, and when training must come to an end.

Korean G.I. training must start, V.A. ruled, within three years from the date a serviceman receives his first "unconditional" discharge or release after Jan. 31, 1955, a type that would allow him to return home to civilian life.

The training benefits stop eight years from the date of his first "unconditional" release from service, or by Jan. 31, 1965, whichever date comes earlier.

A law, enacted four months ago, permits servicemen on active duty on Jan. 31, 1955, to earn G.I. training entitlement up to the date of their "first discharge or release from such service."

In its ruling, V.A. declared that "conditional" discharges should not serve to put an end to the accrual of G.I. training time. "Conditional" discharges usually are granted to permit a serviceman to accept a commission as an officer or warrant officer, or to reenlist in the regular active service. These discharges do not give him the right to leave the armed forces for civil life; therefore, they are not "unconditional."

As an example of how servicemen may build up G.I. entitlement, V.A. cited the case of a man who entered service for a two-year period on Dec. 1, 1954. Recently he received a "conditional" discharge to accept a commission. Despite this discharge, he will continue to accrue G.I. training time up to Dec. 1, 1956, the end of his obligated two-year service pe-



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riod, even though he may stay on active duty longer.

Entitlement to education and training under the Korean G.I. bill, V.A. explained, is figured at one and one-half times the length of allowable military service, up to a maximum of 36 months of training.

The serviceman who accrued entitlement during his two-year service period, then, would be entitled to three full years of training—the maximum. Although he would stop ac-

cruing entitlement at the end of the two-year period he originally was obligated to serve, his starting deadline (three years from discharge or release) would not be measured from this point, but it would be measured from the date he received his first "unconditional" discharge or release. Assuming he received such a discharge on May 25, 1957, his three-years-to-start would be computed from that date. Or, he would have to begin G.I. training by May 25, 1960, at the latest.

Since training must end eight years from discharge or by Jan. 31, 1965, whichever comes earlier, this veteran would not be permitted to train beyond the 1965 date. In his case, that is the date that would come first.

Cites Problems Facing Foreign Students in U.S.A.

NEW YORK. — The Institute of International Education reports that 35,000 students from every major nation of the world, with the exception of the Communist bloc, are studying in American colleges and universities.

At the recent National Conference on Exchange of Persons, which brought together 600 leaders in education, business, religious and civic affairs, Dr. M. Brewster Smith of the Social Science Research Council presented findings on the adjustment problems of foreign students in this country.

Six elements of the total exchange experience constitute a problem facing the foreign students, according to Dr. Smith. These factors are:

1. The need to understand and to speak the language of their classmates. Although foreign students understand English, they may have some difficulty in adjusting to the American idiom.
2. The need to learn the cultural maze. It is difficult for students from entirely different countries to understand the new culture in the United States and to learn to live with it.
3. The importance of gaining acceptance in the United States and in the student body. This is particularly important in behalf of the student's security, according to Dr. Smith.
4. The need to balance loyalties to two societies. The foreign student faces the difficult task of retaining his own national ties and faith, while at the same time appreciating the standards established at the institution at which he is studying.
5. The need to maintain personal integrity and self-esteem. This is particularly difficult for students from colonies or other countries whose prestige as national powers has not yet been established. This sometimes results in the foreign students resorting to defensive reactions, which limit the value of their study experience in this country.
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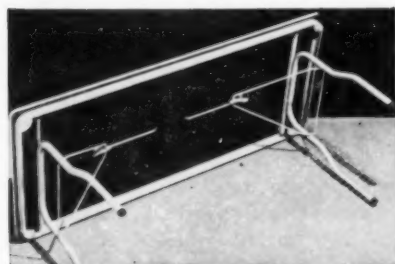
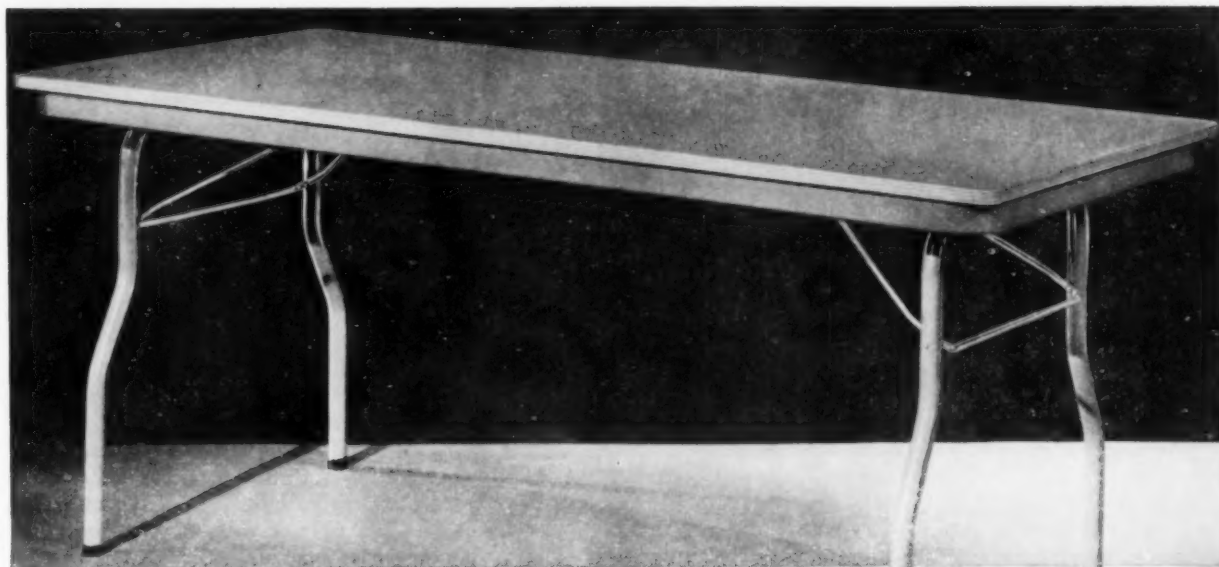
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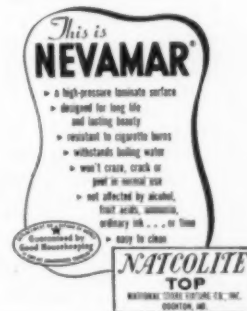
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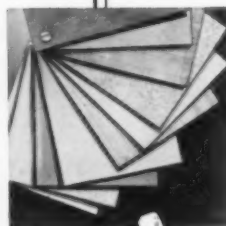
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NEWS.....

is able to achieve success in this primary aim of his American study is dependent very much on how he solves the adjustment problems listed, declares Dr. Smith.

Illinois Shows Racial Bias in Job Openings

CHICAGO. — A recently completed survey by the Illinois Committee on Discrimination in Higher Education indicates that there is wide bias in the hiring of students. The study was conducted by Charles E. Howell, professor of sociology at Northern Illinois State Teachers College at De Kalb. He was assisted in his study by the Anti-Defamation League of B'nai B'rith. It is expected that the survey will be extended to six other Midwest states.

Fifty-five of the 80 placement officers of the state's 60 colleges and universities, including junior colleges in the Chicago area, answered the survey questionnaires. Forty-seven of those who responded submitted statistics, while the others just furnished generalized answers.

Fifty-eight per cent of the 47 reported difficulty finding jobs for students because of race, religion or national origin. Of those responding, 70 per cent reported job orders with discriminatory "strings" attached.

The survey revealed that racial prejudice was the main bias exhibited, with religious discrimination second. Most discriminatory job offers came from the business field.

The institutions from which replies were received, according to Dr. Howell, represented 80 per cent of the state's student population. According to the survey, the committee reported that Illinois colleges accept students without discrimination at the undergraduate level but use some discrimination at the graduate level. Dr. Howell reported that there had been great strides in the removing of discrimination in campus housing and student organizations.

Tuition, Salaries Rise

GRANVILLE, OHIO. — Tuition at Denison University has been increased by \$50 a semester, Dr. A. Blair Knapp, the president, announces. The increase has made possible the adoption of a higher salary scale for the faculty.

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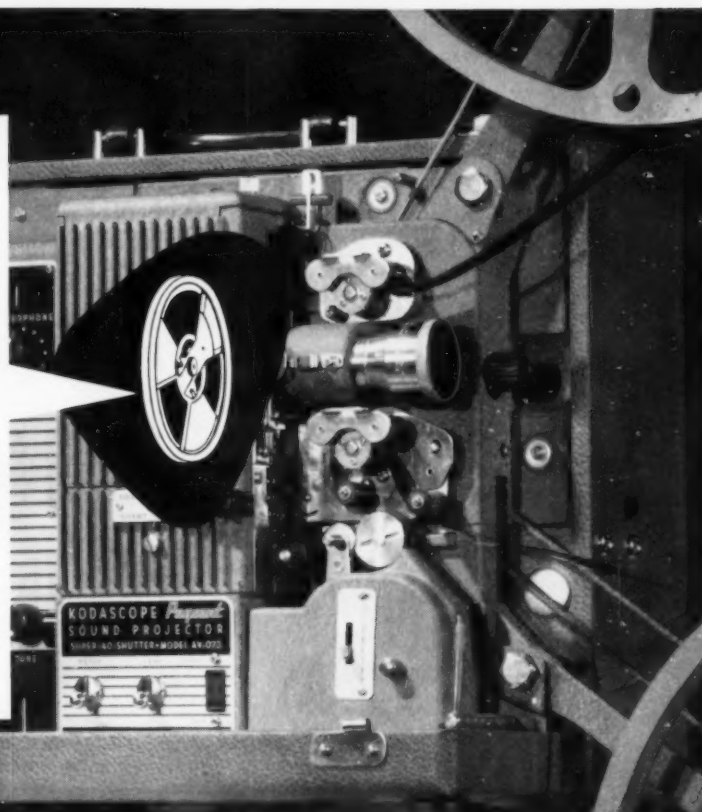


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NAMES IN THE NEWS

Barnaby C. Keeney, 40 year old dean of the college at Brown University, has been named president of Brown University, Providence, R.I. He succeeds **Dr. Henry M. Wriston**, president for the last 19 years, who became eligible for retirement when he reached



Barnaby C. Keeney

his 65th birthday a year ago. Dr. Wriston was designated president emeritus by the corporation.

The Very Rev. **James F. Maguire, S.J.**, president of Xavier University, Cincinnati, is the new president of Loyola University, Chicago. He succeeds the Very Rev. **James T. Hussey, S.J.**, who has been transferred to Detroit to head the fund raising campaign for a new seminary. The Very Rev. **Paul L. O'Connor, S.J.**, who has been dean of the Xavier University College of Arts

and Sciences since 1948, succeeded Father Maguire as the 29th president of Xavier.

Katherine R. Goodwin, dean of girls at Weaver High School in Hartford, Conn., is now director of college activities at Barnard College, succeeding **Helen J. Wright**.

Dr. Lewis M. Wiggin, assistant dean of Yale College, has been named director of student activities and of the Gould Student Center at the University Heights campus of New York University.

Hugh F. Jeffrey, accountant in the business office of Oregon State College, Corvallis, for the last three years, has become assistant business manager of the institution, according to a recent announcement by **G. Morris Robertson**, business manager.



Hugh F. Jeffrey

Bruce S. Hawley, formerly connected with the purchasing department of Holtzer Cabot Division of the National Pneumatic Company of Boston, is the new purchasing agent of Wellesley College, Wellesley, Mass. He succeeds **Philip V. Burt**, who retired on June 30.

William John Gard Jr., manager of housing at Illinois Institute of Technology since 1950, has been chosen director of public relations at Washington College, Chesterton, Md.

J. Edward McCrary, formerly secretary of the Eagle Manufacturing Company of Appleton, Wis., has become chief accountant for Lawrence College in Appleton, according to a recent announcement by **Harlan S. Kirk**, business manager.

William E. Britton, president of the American Association of University Professors, has announced the appointment of **Dr. Ralph F. Fuchs**, professor of law at Indiana University, as general secretary of the association, succeeding **Dr. Ralph E. Himstead**, who died June 9. Dr. Fuchs' appointment became effective September 1.

Frederick E. Terman, dean of the Stanford School of Engineering, has been appointed provost of Stanford University. Dr. Terman, who also will continue as engineering dean, will succeed **Douglas M. Whitaker**, provost since 1952. Dr. Whitaker has resigned to become vice president for adminis-

RSITY OF CALIFORNIA AT LOS A
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NAMES

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Paul C. Hannum

Mr. Hannum has been acting business manager since the sudden death of George Taylor last December. He

Paul C. Hannum has been appointed business manager of the Los Angeles campus of the University of California. Mr. Hannum has been acting business manager since the sudden death of George Taylor last December. He

first joined the U.C.L.A. staff in 1947 as associate business manager and residence halls and housing supervisor.

Jean van Hengel, formerly assistant dean of students at Coe College, Cedar Rapids, Iowa, has been named director of the Women's Residence Organization at Syracuse University.

Franklin B. Cowell, former real estate broker and supervisor of public assistance in Onondaga County, New York, is now bursar of Syracuse University and will head the office that handles

all university income. He succeeds Spencer A. Manzer, who retired in June after 27 years of service on the administrative staff.

Harvey Sherer, assistant business manager at Oregon State College, Corvallis, for the last four years, has accepted appointment as business manager of Yankton College, Yankton, S.D.



Harvey Sherer

Alma Nelson, formerly cafeteria cashier at South Dakota State College, has been made manager of the cafeteria. Miss Nelson is a graduate of the vocational home economics program of the college and has had several years' teaching experience.

Theodore E. Kruglak, former newspaper man, advertising executive, and head of the department of journalism and vice president for development of Long Island University, has been named provost of Long Island University's three colleges in downtown Brooklyn. As provost he will be ranking official in the absence of the university's president, Adm. Richard L. Conolly, Ret. The appointment will free Dr. Conolly for supervising the development of C. W. Post College.

Larry Annis, formerly director of food service at the University of Omaha, has accepted a similar position at the University of South Dakota in Vermillion, announces William Curran, South Dakota business manager.

Richard M. Drake, assistant dean of the college of arts and sciences at the University of Buffalo, has been appointed vice president of the University of Kansas City, Kansas City, Mo.

George Finlay Simmons, president of Montana State University at Missoula from 1936 to 1941, died recently in Glen Ellyn, Ill., at 60 years of age. Dr. Simmons had been a member of the school of medicine staff of Loyola University in Chicago since 1944.

Dr. Chauncey S. Boucher, president of the University of West Virginia from 1935 to 1938, and chancellor of the University of Nebraska from 1938 to 1946, died August 13 at the age of 69 years. Dr. Boucher lectured at Knox College, Galesburg, Ill., from 1947 until his retirement in 1952. His home was in Tucson, Ariz.



Walter Horst, Superintendent
Three Rivers, Michigan

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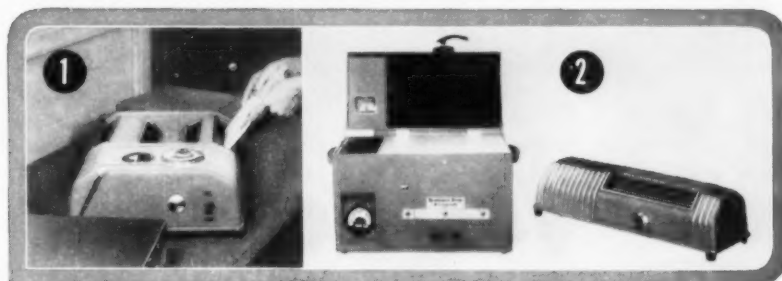
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National Association of Physical Plant Administrators of Universities and Colleges

President: C. B. Jensen, University of Wyoming; secretary-treasurer: A. F. Gallistel, University of Wisconsin.

National Association of Educational Buyers

President: D. R. Kimrey, University of Oklahoma; executive secretary: Bert C.

Ahrens, 1461 Franklin Ave., Garden City, N.Y.

National Federation of College and University Business Officers Associations

President: Nelson A. Wahlstrom; University of Washington; vice president: Henry Doten, University of Maine; secretary-treasurer: C. H. Wheeler III, University of Richmond.

Associations of College and University Business Officers

American Association

President: J. B. Clarke, Howard University; secretary: B. A. Little, Southern University.

Central Association

President: C. C. DeLong, University of Illinois; secretary-treasurer: T. N. McClure, Knox College.

Eastern Association

President: W. R. Hendershot, New York University; secretary-treasurer: Irwin K. French, Wellesley College.

Convention: Dec. 11-13, Chalfonte-Haddon Hall, Atlantic City, N.J.

Southern Association

President: Wendell M. Murray, North Carolina State College; secretary: C. O. Emmerich, Emory University.

Western Association

President: Gerard Banks, College of Puget Sound; secretary: Kenneth A. Dick, University of Idaho.

Canadian Association of University Business Officers

President: A. G. Rankin, University of Toronto; secretary-treasurer: E. A. Wilkinson, Hart House, University of Toronto.

Association of College Unions

President: Frederick Stecker, Ohio State University; secretary-treasurer: Edgar A. Whiting, Cornell University; editor of publication: Porter Butts, University of Wisconsin.

Convention: April 8-11, Purdue University, West Lafayette, Ind.

College and University Personnel Association

President: Arlyn C. Marks, State University of Iowa; secretary-treasurer: Elwood C. Clark, Rutgers University; executive secretary: Donald E. Dickason, University of Illinois. Permanent headquarters, 809 S. Wright St., Champaign, Ill.

Convention: Aug. 5-8, Cornell University, Ithaca, N.Y.

National Association of College and University Housing Officers

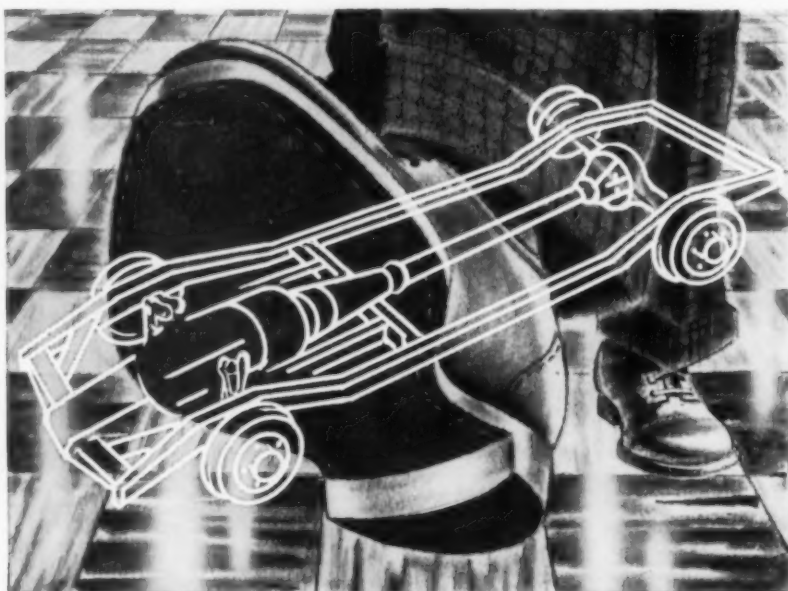
President: F. C. McConnell, University of Texas; secretary-treasurer: Ruth N. Donnelly, University of California, Berkeley.

American College Public Relations Association

President: Francis C. Pray, University of Pittsburgh; executive secretary: Marvin W. Topping, 726 Jackson Place, N.W., Washington 6, D.C.

National Association of College Stores

President: Carl Birdwell, A&M College of Texas, College Station; executive secretary: Russell Reynolds, Box 58, 33 West College Street, Oberlin, Ohio.



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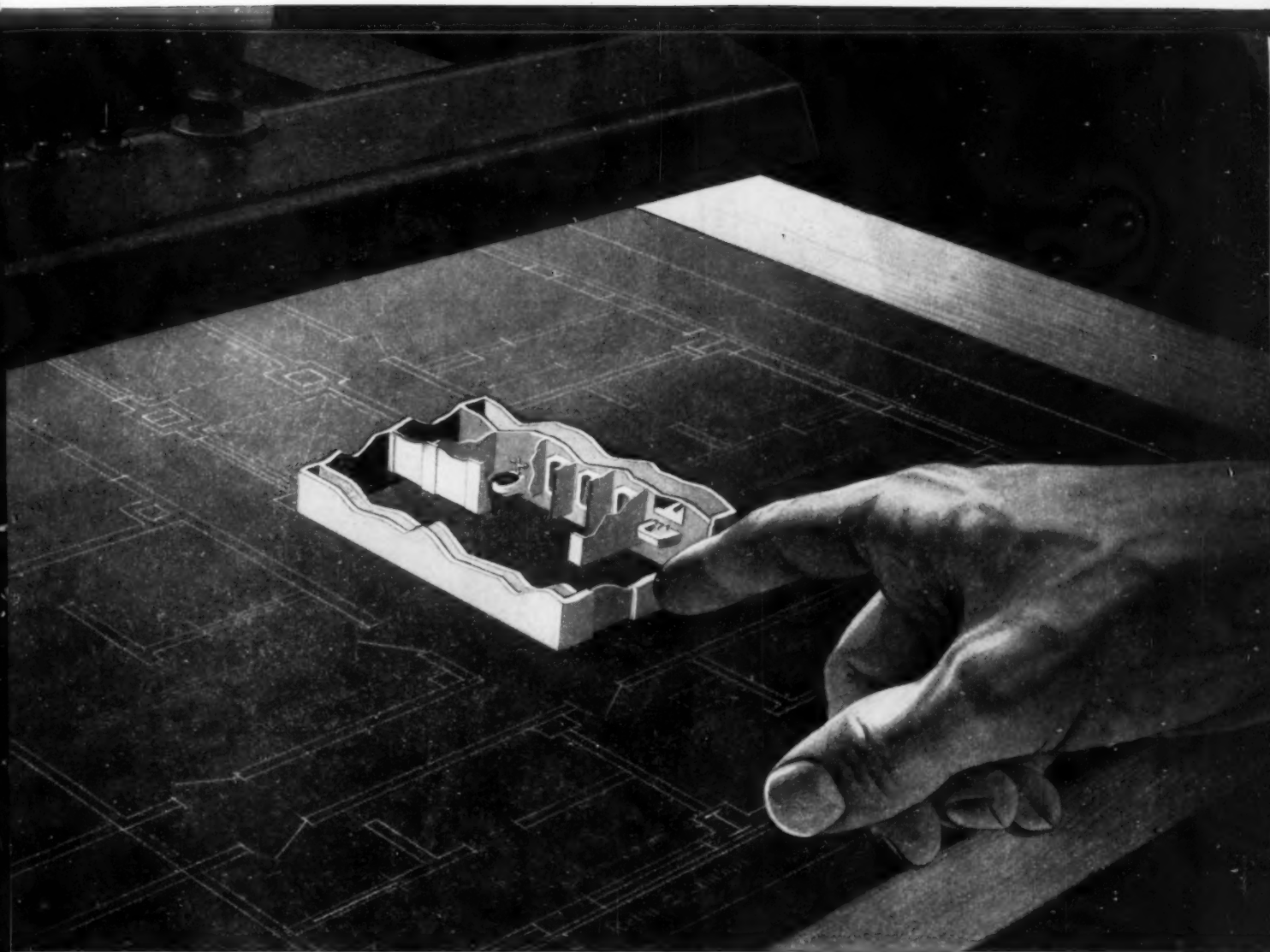
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Administrative—Position desired by one experienced in investments, management of trusts, and with a legal background; reasonable salary requirements. Write Box CW-226 COLLEGE AND UNIVERSITY BUSINESS.

Food Service Director—Five years experience as food service director of student union at large state university; author of cookbook for Walgreen Drug Store chain; B.S. degree, Iowa State College; experienced in all phases of food service administration; west coast location preferred. Write MRS. MARJORIE KRIDLER, 28 Highfield Road, Northwood, Middlesex, England.

Maintenance—Experienced, capable, in all general maintenance of buildings, and grounds; electrical, plumbing, painting, carpentry, etc.; desirous of permanent year round position; capable of taking complete charge; communicate direct with: ALBERT MAGNIN, Ellada Home, Rt. No. 4, Asheville, North Carolina.

Superintendent Building and Grounds—Desires change; engineering school graduate; nine years experience as superintendent in Midwest college plus twenty years experience in construction, maintenance, planning and supervision; consider any supervisory position in Southwest location. Write Box CW-268, COLLEGE AND UNIVERSITY BUSINESS.

POSITIONS OPEN

Assistant Superintendent of Building and Grounds—In co-educational college in New

England with large campus to expedite work and supervise tradesmen, janitors, grounds-men; state age, experience, education, salary requirements. Write Box CO-168, COLLEGE AND UNIVERSITY BUSINESS.

Director of Food Service—New England co-educational college with year-round program has interesting and challenging opening for well-qualified man to assume full responsibility for entire food service operation. Write Box CO-157, COLLEGE AND UNIVERSITY BUSINESS.

Director of Food Service and Housing—California women's college has opening for woman; should be member American Dietetic Association qualified to supervise Association sponsored administrative intern program; approximately 500-600 resident students, 3 kitchens, bakeshop and tea room. Send resumé to Treasurer, MILLS COLLEGE, Oakland 13, California.

Market Research Analyst—Excellent position involving fund raising activities available with Midwest university; female preferred; must have office managerial, statistical or accounting experience; ability to prepare statistical reports from own analysis and supervise clerical staff; resumé of training and experience required. Write Box CO-174, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds—At Scarritt College for Christian Workers, Nashville, Tennessee; to replace present incumbent who has reached retirement age; state age, experience, education, salary requirements. Write SCARRITT COLLEGE FOR CHRISTIAN WORKERS, Nashville 5, Tennessee.

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COLLEGE AND UNIVERSITY BUSINESS

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COLLEGE and UNIVERSITY BUSINESS

WHAT'S NEW

September 1955

Edited by Bessie Covert

TO HELP you get more information quickly on the new products described in this section, we have provided the postage paid card opposite page 96. Circle the key numbers on the card which correspond with the numbers at the close of each descriptive item in which you are interested. COLLEGE and UNIVERSITY BUSINESS will send your requests to the manufacturers. If you wish other product information, just write us and we shall make every effort to supply it.

16 Quart Bucket for Mopping Unit



The "Floor Knight" mopping unit is now offered with a new heavy-duty 16 quart bucket. Fabricated of 24 gauge steel, the bucket is reinforced with a heavy gauge band that is interlocked into the body with a special, snagproof recessed body-bead joint. Danger of cave-ins from excessive pressure on the wringer is prevented. Hot-dip galvanized after fabrication to prevent rusting, the new bucket has recessed bale ears located well below the rim to permit placement of the wringer on any part of the rim. The unit moves easily on casters. Geerpres Wringer, Inc., 1780 Harvey St., Muskegon, Mich.

For more details circle #705 on mailing card.

Cork Surface Trays Have Non-Skid Surface

Natural cork on brown plastic is used in the new line of Bolta trays. The cork-lined bottom provides a non-skid surface for carrying dishes, glasses and other items. The practical, decorative trays are available in three round and five rectangular sizes. Bolta Products, Lawrence, Mass.

For more details circle #706 on mailing card.

Portable Tape Recorder Has Multiple Speed VU Magnemite

Designed for extreme simplicity of operation and to meet the most difficult requirements of portable use, the new VU Magnemite portable tape recorder incorporates a VU meter to act as recording level indicator, output level indicator and "A" and "B" battery meter. One, two, three and four speed models are available for meeting primary as well as secondary NARTB standards and record or playback frequencies up to

15,000 cycles. The light weight unit has flashlight-type batteries with an operating life of 100 hours. The unit features controlled motor assuring constant speed, precision-made tape transport mechanism and removable dynamically balanced flywheel for flutter-free recording and playback of music. Equalization for different speeds is automatic. Amplifier Corporation of America, 398 Broadway, New York 13.

For more details circle #707 on mailing card.

Water Demineralizer for Inexpensive Operation

A constant flow of deionized water for use in laboratories and other areas is inexpensively produced with the new Cenco Quikpure Demineralizer. The unit produces water of a grade compar-



able to triple distilled in specific resistance from tap water. High purity deionized water is produced at the rate of three gallons per minute from water mains at 40 pounds pressure.

The demineralizer unit is charged with 30 pounds of anion and cation resins and is contained in a polyethylene bottle housed inside a metal cabinet. The bottle is easily replaced when necessary. The metal cabinet is finished in gray hammerloid with a white plastics top and chrome-plated brass drain. All tubing, metal piping and fixtures are of plastics, or coated with plastics. Water is drawn from the gooseneck spout by a control valve in the front of the unit. Central Scientific Co., 1700 Irving Park Road, Chicago 13.

For more details circle #708 on mailing card.

Electric Counter Line Has Satin Chrome Finish

Sturdy construction, faster heating and functional design are some of the features of the new custom-design Griswold electric counter line. Units in the line include an electric fry kettle, food warmer and two sizes of griddles. All items are designed to fit in any desired arrangement or numbers for counter installation. Satin Chrome finish and red operating knobs make it attractive in appearance and easy to keep clean.

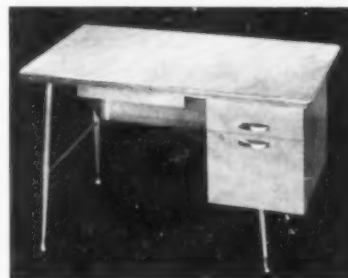
The units can be installed anywhere as they will fit a narrow, 17 inch wide counter. A recess in the back of each unit for conduit or cord and plug permits flush-to-wall mounting. The matched design gives custom built appearance and each item has adjustable levelling feet. Griswold Mfg. Co., 12th & Raspberry, Erie, Pa.

For more details circle #709 on mailing card.

Teacher's Desk in Modern Design

Designed to blend with the modern concept of schools, the new Kuehne Teacher's Desk is of strong lightweight tubular steel construction. The 30 by 48 inch top is of General Electric Textolite for years of wear without stain or marking. It is glareproof and heat resistant and available in an assortment of colors.

Pedestal drawers are equipped with a lock and the drawer faces match the desk top. Adjustable partition in the top drawer provides for student record cards 3 by 5, 5 by 7 or 5 by 8 inches in size. The bottom drawer is partitioned to provide for standard file folders. The design is functional and attractive and the desk is available in three durable finishes: spring green, metallic-mist gray



and non-reflecting satin chrome. Teachers' desks are available in single and double pedestal styles. Kuehne Mfg. Co., Mattoon, Ill.

For more details circle #710 on mailing card.

What's New ...

Four Sets of Documents Typed Simultaneously on Cardatype

The new IBM Cardatype Accounting Machine, Type 858, will produce up to four different sets of documents or forms



with a single typing. The "one-man-force" office machine eliminates repetitious clerical tasks and saves time on paper work and records. The basic machine has three units: an IBM Electric Typewriter, an auxiliary numerical keyboard and IBM equipment for reading punched cards and automatically controlling the entire Cardatype operation. Three more connected, unattended typewriters may be installed beside the Cardatype for the production of related forms.

An automatic computing unit is another feature of the Cardatype. It permits calculations to be made, according to a preset program, on any job given to the machine. The machine also has a programming unit and units to produce a by-product punched tape or a set of punched cards. Most of the typing is done automatically as the Cardatype reads information from punched cards. Information is held for use on other forms and bills are computed and other figuring done automatically by the machine. **International Business Machines Corp., 590 Madison Ave., New York 22.**

For more details circle #711 on mailing card.

Pre-Mixed Mortar and Grout Are Strong and Shrinkproof

Two time-saving building products are now being made available in ready-to-use form. Embeco Pre-Mixed Mortar and Embeco Pre-Mixed Grout are convenient to transport and to handle on the job and are non-shrink in use. They are composed of carefully blended, laboratory tested ingredients and have high compressive and impact-resistant strength, toughness, oil and water resistance, and set quickly.

The new products are useful in patching, repairing, grouting and caulking. They save time in assembling ingredients and the carefully prepared formula makes them more efficient in use. Only the addition of water is needed on the job to prepare Embeco mixes for use. **The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio.**

For more details circle #712 on mailing card.

Cem-Seal Coating Protects Concrete Surfaces

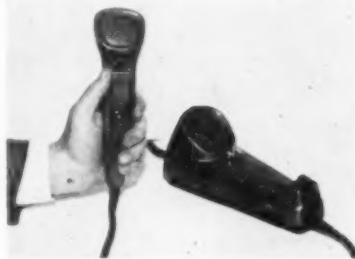
One coat of Cem-Seal forms a seal on concrete surfaces which prevents deposits of alkaline salts. Cem-Seal may be applied to new concrete to eliminate dusting or to old concrete to put an end to dusting that has started. A floor treated with Cem-Seal will not take up grease, water, stains or dirt, and cleans easily. **Hillyard Chemical Co., St. Joseph, Mo.**

For more details circle #713 on mailing card.

Remote Control Dictating Machine

Control of the dictating equipment of the President Model Dictaphone Time-Master is on the secretary's desk, with only the microphone on the desk of the dictator. Dictation is at the transcriber's desk automatically, yet the dictator has full command of the dictating machine through controls located on the microphone. The dictator controls start and stop of recording, lock for continuous recording or listening, playback, correction and end-of-letter markings. Yet he has no worry about changing the Dictabelt records and other details.

The small sized, streamlined unit



takes minimum space on the dictator's desk. Control is simple, automatic and precise. When the microphone is returned to the proper rest position, a magnet guides it and holds it in place in the Magnet Grip desk set. The new remote control model permits the transcriber to work without leaving her desk. **Dictaphone Corp., 420 Lexington Ave., New York 17.**

For more details circle #714 on mailing card.

Magnetic Tape Reel Formed in Plastic

One-piece construction and a 5/16 inch center hole are among the features of the new 10 1/2 inch plastic magnetic tape reel. Made of tough, glass-reinforced plastic that cannot be bent out of shape or permanently distorted, the tape reel can be used on machines which employ adapter arms as well as on all standard tape recorders which will accept a 10 1/2 inch reel. Rounded edges of the plastic flanges eliminate nicked tape edges and cut fingers. **Minnesota Mining & Mfg. Co., 900 Fauquier St. Paul 6, Minn.**

For more details circle #715 on mailing card.

(Continued on page 80)

Low-Cost Coffee Urns Provide Hot Water Supply

Designed to meet the need for a low-cost urn to facilitate coffee brewing and cleaning, Tri-Saver Jr. and Sealweld Jr. provide their own hot water supply. The urns are quickly disassembled in a matter of minutes for cleaning purposes and they are equally adaptable for brewing instant coffee and iced tea as well as regular coffee. Both models are similar but the Tri-Saver Jr. is furnished with a permanent stainless steel Tri-Saver filter which eliminates use of urn bags and filter paper. **S. Blickman, Inc., Weehawken, N.J.**

For more details circle #716 on mailing card.

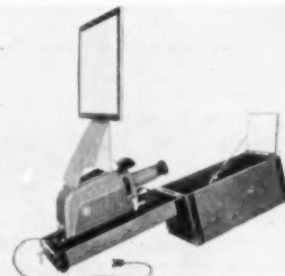
Improved Dishwasher Has Rinse Water Booster

A 180 degree final rinse water booster has been developed for installation on the Model D all-purpose small space dishwashing machine. It is available for use with gas, steam or electricity. A newly developed revolving wash and new lightweight balanced final rinse line are other improvements on the Model D. Stainless steel strainer pans, tracks, wash arms and other parts in the new model are included to withstand the stronger action of detergents now in general use. The machine operates at water pressures as low as five pounds. **Universal Dishwashing Machinery Co., 49 Windsor Place, Nutley, N. J.**

For more details circle #717 on mailing card.

Rear Screen Unit for Classroom Use

The Soundview Rear Screen unit has been designed especially for use in the classroom. It will accommodate any Soundview projector Model PS43, PS63 and PS65F. The instructor may remain seated, facing the class, when presenting a program with the new unit which will easily fit on any desk. A picture area of 11 by 14 inches, which is clearly definable from any angle in a brightly lighted room, is a feature of the folded easel-type screen included in the unit.



The case is large enough to carry a slide carrier and extra lens. Overall size of the unit is 8 by 18 by 10 inches. **Automatic Projection Corp., 282 Seventh Ave., New York 1.**

For more details circle #718 on mailing card.

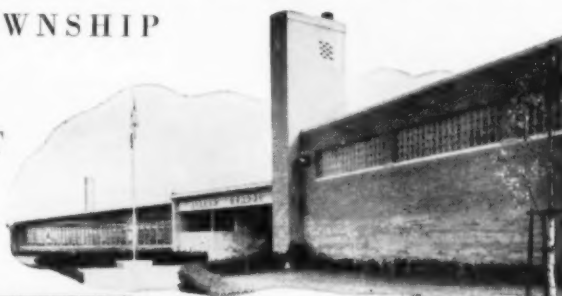
Adaptable, Economical



The ORIGINAL Tubular
Steel School Furniture

Extra Quality* Heywood Furniture

THROUGHOUT THE RAPIDLY EXPANDING
PENN TOWNSHIP
SCHOOL
DISTRICT



THE NEW HEBRON SCHOOL



During the past six years Penn Township School District has added 45 new elementary classrooms to its facilities. In selecting Heywood furniture, Superintendent John H. Linton, Ed. D., and Architect Joseph Hoover sought flexible units which could adapt to many varied classroom needs, and durable units which would require a minimum of maintenance. Over 11,000 pieces of Heywood-Wakefield Tubular Steel Furniture are now in service in this progressive school system. Installations were by the Hughes-Ogilvie Company, Heywood distributors, Pittsburgh, Pa., in cooperation with the Heywood-Wakefield Eastern Headquarters, One Park Avenue, New York.

THE NEW ROBERTS
ELEMENTARY SCHOOL



★ ★ ★

*Extra quality design and construction features of Heywood-Wakefield Tubular Steel Furniture are fully described in the new School Furniture Catalog. Write for your free copy, today. Heywood-Wakefield, School Furniture Division, Menominee, Michigan; Gardner, Massachusetts.

What's New . . .

Knee-Hole Desk in Graded Sizes

The Knee-Hole Desk s275 in the new Trim Line of school furniture is suited for general activity classes at all grade



levels. It is available in nine graded sizes and has compartments of strong 20 gauge sheet steel. Compartments are optional and are available with either single box or large divided area on either right or left side of the unit.

The desk is sturdily constructed of $\frac{3}{4}$ inch chrome-plated seamless tubular steel with solid birch top. Legs are continuously braced with $\frac{1}{2}$ inch tubular steel. Super-silent, permanently attached glides protect floors and make the desks easy to move for any classroom arrangement. Tables without compartments can be used as typing or special activity units. Heywood-Wakefield Co., 206 Central St., Gardner, Mass.

For more details circle #719 on mailing card.

Bottle Pump Protects Distilled Water

A new Barnstead Bottle Pump has been developed to protect distilled water and other liquids in removal from tanks and other containers. It prevents contaminating matter from entering the container when the pump is installed. Air forced into the container is automatically cleaned since it must first pass through the special Ventgard filter which prevents entrance of air-borne bacteria, dust, mist and other impurities. Barnstead Still & Sterilizer Co., 2 Lanesville Terrace, Forest Hills, Boston 31, Mass.

For more details circle #720 on mailing card.

Metal Partitions Are Portable

"Metlwal jr" offers limitless flexibility in rearrangement of space in schools, colleges and other institutions. The new portable metal partitions are easy to handle and install and are available in a system of interchangeable parts and a variety of lengths and widths. All "Metlwal jr" partitions have a protective Bonderite coating, making the surface corrosion resistant. Martin-Parry Corp., Metlwal Div., P. O. Box 964, Toledo 1, Ohio.

For more details circle #721 on mailing card.

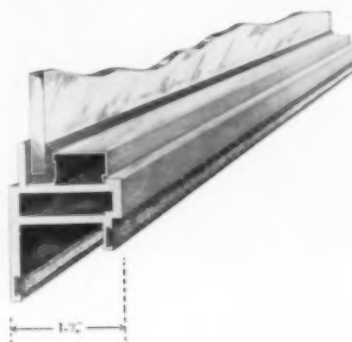
Infra-Red Food Warmers Retain Moisture and Flavor

Cres-Cor "Golden Glow" Infra-Red Food Warmers utilize radiant penetrating heat in retaining the moisture and true flavor of food. An anodized hood, separated shelf on the top for cold dishes and salads, a toggle switch for individual control and a special focus arrangement are features of the new line of warmers. "Golden Glow" Warmers are also efficient as bun or roll warmers, as dryers for glasses or silver and as plate warmers. Crescent Metal Products, Inc., 18901 St. Clair Ave., Cleveland 10, Ohio.

For more details circle #722 on mailing card.

Larger Expanse of Glass With Tubular Aluminum Windows

The new Series T-500 Tubular Aluminum Windows feature exceptional strength as well as the use of larger expanses of glass in the vent and fixed portions of windows. The heavy tubular design employs specially tempered 6063S Aluminum Alloy in the construction. The tubular windows are the result of



months of research and development. Series T-500 windows are inside glazed with a heavy glazing bead and will accommodate $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ or $\frac{3}{4}$ inch glass. Hardware is forged aluminum and windows have two point weather stripping for an air-tight seal. Valley Metal Products Co., Plainwell, Mich.

For more details circle #723 on mailing card.

Venetian Blind for Room Darkening

Rooms are sufficiently darkened for TV or to get sharply-defined images on a screen, yet are light enough for teacher surveillance and pupil note taking with the new Levolor Blackout Venetian Blind. The blind is flutter-proof and can be tilted to provide any degree of light control wanted. A change in rout holes and more closely spaced tape ladders results in a deep overlapping of slats in the new blind. It is equipped with an improved plastic tape with cross-fiber construction to prevent tearing. Levolor Lorentzen, Inc., 720 Monroe St., Hoboken, N. J.

For more details circle #724 on mailing card.

Luminous Ceiling Material for Non-Glare Lighting

Low-cost, non-glare lighting is offered with the new Boltaron LC9100 corrugated luminous ceiling material. The low-cost material is designed for modern installations in institutional and other lighting. Boltaron LC9100 is a fire-resistant polyvinyl acetate material which comes in white corrugated translucent sheets that are shatterproof and will not crack, craze, warp, rot or mildew. It transmits fluorescent light at high efficiency, yet diffuses it to produce shadowless, non-glare illumination. The material is decorative as well as functional and is now available in widths from 12 to 48 inches, in lengths up to 100 feet. Bolta Products, Lawrence, Mass.

For more details circle #725 on mailing card.

Attractive Colors for Laboratory Equipment

To add to the brightness and color of the laboratory, Hamilton is offering six new finishes in vibrant colors for laboratory equipment. They are designed to stimulate activity, provide better light reflection and improve appearance. Rooms that are harmoniously pleasing and efficient can be designed with the new Blonde, Honey Maple, Saddle Brown, Driftwood, Ocean Spray and Granite Gray finishes available for laboratory furniture, when combined with the resistant and colorful Hamilton tops. Hamilton Mfg. Co., Two Rivers, Wis.

For more details circle #726 on mailing card.

Glass-Beaded Fabric for Hilo Screen

A new and improved glass-beaded, mildew and flame resistant fabric is now being used on the Da-Lite Hilo screen. Chrome plating on metal portions of the screen is another improvement to add to the durability of the unit. The Hilo is



easily adjusted to the desired height and can be used as a wall screen if desired. There is no increase in price for the improved model. Da-Lite Screen Co., Inc., 2711 N. Pulaski Rd., Chicago 39.

For more details circle #727 on mailing card.

(Continued on page 82)

COLLEGE and UNIVERSITY BUSINESS

Cut Your Painting Costs

50%

or more

with Barreled Sunlight Odor-Free Alkyd Finishes

It's as simple as this: —

No matter how badly a room needs painting, one coat of Barreled Sunlight Odor-Free Alkyd Flat or Semi Gloss will do the job as well . . . if not better . . . than two coats of ordinary paints. Automatically you cut your costs just about in half — not only for paint but also for *labor* which represents 80% of the total cost for the job. But that is just the beginning!

With these new, *high quality* finishes your painter can work much faster. They go on like a breeze . . . no trouble with sagging, lapping or color variations, even on large unbroken areas. And they dry faster . . . faster than overnight. You can paint a room in the morning and use it that very evening.

What's more, the smooth, uniform surface you get with one coat of Barreled Sunlight Odor-Free Alkyd Finishes is a durable, practical surface . . . a surface that cuts maintenance and long range painting costs. You can wash it and scrub it . . . even scuff marks wipe right off. Barreled Sunlight Paint Co., 23-1 Dudley St., Providence 1, R.I.

*Reg. U. S. Pat. Off.

Barreled Sunlight

Paints



In whitest white or clean, clear, wanted colors, there's a Barreled Sunlight Paint for every job

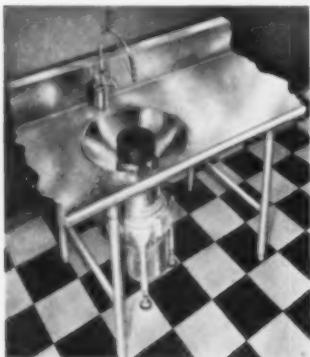


These finishes . . . in white or wanted colors, really pay off . . . in better looking rooms for a much lower painting cost. Try them. Test them. Write for free color card and name of your nearest Barreled Sunlight distributor.

What's New . . .

Food Waste Disposer in Three Models

Three models of the new Hobart Food Waste Disposer are available. Model



FW-150-1 is a cone adapter type food waste disposer unit for pantry application and general food waste disposing. Model FW-150-2, illustrated, is a cone adapter type disposer for dish table application for dish scrapping and general food waste disposing. Model FW-150-3 is a sink type disposer for dish table application for scrapping racked dishes and general food waste disposing.

All models have highly efficient centrifugal cutting action and powerful motors. They handle all food waste from

paper napkins and toothpicks, through bones, ground coffee and nut shells. They are especially designed for self-cleaning operation, the water and cutting action automatically cleaning each unit after use. It is a self-feeding unit which handles all preparation waste or other food waste without jamming or damaging the disposer. The Hobart Mfg. Co., Troy, Ohio.

For more details circle #728 on mailing card.

Instant Citrus Juice From Fresh Fruit Crystals

A new form of dehydrated citrus is offered as soluble crystals, which are simply and quickly re-constituted by merely adding water. Years of research have gone into the development of this product to produce a pure concentrate with a natural flavor, which has a pure fruit aroma and does not cake. The new product retains the vitamin C and other nutritive values of the fresh juice.

Instant Orange and Grapefruit Crystals require no refrigeration in storage. The product is prepared by a patented process for rapid drying of citrus juice developed by The Vacu-dry Company.

Years of research and experience in the production and marketing of dried deciduous fruits enabled Vacu-dry to perfect and patent the commercially feasible method for drying citrus juices into solu-

ble crystals which can be reconstituted with flavor, appearance and nutritive values comparable to the fresh product. The product is processed and distributed by Orange Crystals, Inc., Plant City, Fla.

For more details circle #729 on mailing card.

Individual Serving Bowls Hold Temperatures

Attractive, unbreakable individual thermal serving bowls are available for hot or cold foods. The Stanley No. 1353 Serving Bowls have highly polished all stainless steel body and cover in crevice-free design for easy cleaning. Fully insulated they hold the desired tempera-



ture of ice creams, salads, soups or cereals. The lightweight bowls have a six ounce capacity. Landers, Frary & Clark, New Britain, Conn.

For more details circle #730 on mailing card.

(Continued on page 84)

Sligh offers the furniture dealer, interior decorator and architect an outstanding selection of contract furniture ideally suited to colleges, hotels, motels, hospitals and other institutions. Our designers will gladly cooperate in developing new groups or pieces to your particular specifications. Complete details on request.

• Dormitory room at Michigan State College furnished with Sligh contract pieces



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FURNITURE

SLIGH-LOWRY FURNITURE COMPANY • 174 East 11th Street • Holland, Michigan • Telephone 3465

THE tightest CLOSING WINDOWS EVER MADE!

Law School Building
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**OPEN FULLY
FOR TRUE
CLIMATE CONTROL**

Select

LUDMAN
Auto-lok
AUTOMATIC LOCKING
WINDOWS



SEALS LIKE A REFRIGERATOR

TRUE CLIMATE CONTROL begins with Auto-Lok Windows because they close **MANY TIMES TIGHTER** than any other window yet open easily to almost 90 degrees to scoop in any breeze. Auto-Lok windows keep the temperature at just the right teaching and learning level in hot and cold weather by effectively blocking out the extremes, keeping the desired warmth or coolness in. In pleasant weather Auto-Lok windows circulate fresh air even when it rains by controlling the vent openings perfectly.

SEND COUPON BELOW TODAY to learn why Auto-Lok Windows meet the ten most important requirements that experts* agree are really important in a window . . . to learn of reduced fuel costs . . . to know how you save with windows that are washed from the inside.

SCHOOLROOM PROGRESS • U.S.A.

has invited Ludman Corporation and 26 other outstanding American manufacturers of school building products and equipment to participate in a traveling exposition touring 250 cities, which will give school officials an opportunity to see the changes in schoolroom construction over the years. Co-sponsored by the Henry Ford Museum and Greenfield Village and The Encyclopedia Americana it will feature replicas of schoolrooms of 1840 and 1890 contrasted with the ideal classroom of today and tomorrow. Ludman Auto-Lok Control Bar Windows are displayed in the modern section which reveals the latest in classroom architecture. See it in your city.

* Geoffrey Baker and Bruno Funaro in "Windows in Modern Architecture"

LUDMAN *Corporation*
NORTH MIAMI • FLORIDA

**LUDMAN LEADS IN
SCHOOL WINDOW ENGINEERING**

LUDMAN CORPORATION • North Miami, Florida Dept. CUB-9

Please send me full information on Auto-Lok windows for modern schools.

Name..... Title.....

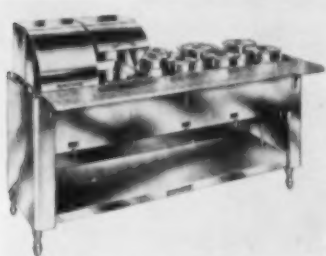
Street..... City.....

Zone State.....

What's New ...

Thurmaduke Units Maintain Temperatures

Improved insulation completely surrounding each food section of the food



service units in the new 1955 Thurmaduke line ensure proper temperature maintenance and reduce heat loss. The Thurmaduke Selective Heat Control in each section is thermostatically maintained to keep each type of food at the correct temperature to preserve flavors and reduce shrinkage. The efficiency of the units reduces operating costs.

A wide variety of units and sizes is available in the new line. Units are offered in stainless steel or oven baked Thurmaduke Gray Enamel finish. Bodies are of all-welded rigid steel construction with corners rounded and polished for easy cleaning and maintenance. Duke Manufacturing Co., 2305 N. Broadway, St. Louis 6, Mo.

For more details circle #731 on mailing card.

Generating Plant for Emergency Institutional Use

A new 75,000 watt capacity emergency electric generating plant has been developed to meet the increased electrical requirements of modern colleges and other institutions. The new Onan-built generator in the high-capacity standby electric plant has been specifically designed to provide excellent electric motor starting. This makes it especially suitable for use in institutions where equipment is operated by electric motors.

If desired this heavy-duty generating plant will provide dependable, economical power for daily use. Known as Model 75HR, the new unit is gasoline-engine driven, powered by a Continental six cylinder engine. The generators are designed to permit parallel operation if desired and two or three units can economically serve a large load. D. W. Onan & Sons Inc., 6251 University Ave., Minneapolis 14, Minn.

For more details circle #732 on mailing card.

Electric Collator Features Low Cost

The new Collamatic electrically powered collating machine is operated by a light touch of the hand. The low-cost machine permits operation for long periods of time without tiring the operator, and permits operation by inexperienced

operators. It is designed for a sustained rate of production of approximately 8000 collated sheets per hour.

Over a ream of paper can be accommodated in the feed bins of the new Model "800." Sheets are fed by new positive feed Magicfeed Roller which is easily disengaged for loading. A built-in inspection stage allows the operator to glance over sheets before they are collated. Speedy disposal of the collated



set is accomplished with the stapling-stacking bin. An automatic counter may be included as optional equipment. Collamatic Corporation, Wayne, N.J.

For more details circle #733 on mailing card.

(Continued on page 86)

100

**DIFFERENT SIZES, STYLES
OF BULLETIN BOARDS AND
CHANGEABLE LETTER BOARDS**

BY DAV-SON

A Dav-Son board for every job. Changeable letter directory and announcement boards, black boards, menu boards, others. Sturdily constructed, every Dav-Son board is built to last, with quality built-in for years of service.

Dav-Son Changeable Letter Directories for Lobby, Office, Outdoor Use.

- Wide Variety of Styles and Sizes
- Glass Enclosed Front
- Hardwood or Metal Frames
- Highest Quality Felt
- Absolutely Warpproof
- Also Available with 5' 8" Standards

Dav-Son Genuine Self-Sealing Cork Bulletin Boards

- Indoor and Outdoor Styles
- Hardwood or Metal Frames
- With or Without Locking Glass Doors

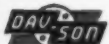
DEALER INQUIRIES INVITED
If Your Dealer Can't Supply,
Order Direct

J. F. HESTER

A. C. DAVENPORT & SON, INC.

311 N. DESPLAINES STREET, CHICAGO 6, ILLINOIS, DEPT. CB

INSIST ON DAV-SON—YOUR BEST BUY!



Dav-Son Changeable Name Plate
Black card with white letters under beveled plexiglass shield. Triangular wood base in choice of Walnut, Oak, Mahogany, Blonde or Steel Grey finish. 10 1/2" x 2 1/4"

THE "NARRIM" STORY

by
Walker China
VITRIFIED

GARLAND
on "Narrim" Shape

Ideal for tray service in hospitals, cafeterias, or for any commercial requirement combining space-saving with beauty, durability and quality. For complete information and name of nearest dealer, write—

THE WALKER CHINA CO. • BEDFORD, OHIO

The future
is forecast in this finest of
school furniture



**RECTANGULAR
ALL-PURPOSE TABLE**

Available with extra-large storage shelf, accessible from either side. Graceful 1½" tubular steel legs tapered to chrome-plated self-leveling glides with noise-proof rubber mounts. Three popular colors and satin chrome. Furnished in graduated heights with General Electric Textolite Plastic tops.



STACKING CHAIRS

Stacking simplifies storage, recovers space quickly by easy, secure nesting within floor area of a single unit. Legs are 1½" tapered tubular steel with ferrule-type chrome-plated rubber-mounted glides, spread slightly for stability. Seat and back of 5-ply hardwood impregnated with water-resistant resin.

A COMPLETE LINE



KUEHNE
(SAY "KEE-NEE")

Here is school furniture so new, so functional, so trim and beautiful that schools to be planned will be up-to-date with this forward-looking equipment.

Rugged, to resist constant wear and tear... tough and durably finished in cheerful colors or satin chrome... posture engineered for relaxed, all-day comfort... and priced no higher than furniture of ordinary construction.

Thirty-two years of experience has gone into building this outstanding furniture—America's finest in quality, in styling, in value.

Write for illustrated brochure

KUEHNE MANUFACTURING CO. • MATTOON, ILLINOIS
(KEE-NEE)

World's Largest Manufacturer of Tubular Furniture

What's New . . .

Increased Freedom in Slanting Post Desks



More leg freedom and easy entrance and departure are claimed for the new Individual Table Desks with forward-of-center slanting post construction. The unique design provides a rigid, durable desk with comfortable space beneath the book box. Chair movement for seating comfort is said to be reduced.

The new table desks have solid hardwood tops, large book compartments and projection-free underneath surfaces. The No. 841 is a stationary-top desk with open book box. No. 851 is a lift-lid model with adjustable-tension slam control friction disc hinges to protect fingers and prevent noise. Both models are available in four table heights, with or without inkwells. Arlington Seating Co., Arlington Heights, Ill.

For more details circle #734 on mailing card.

Wall Bracket Suspends Water Cooler

Ample clearance for floor cleaning equipment can be provided under water coolers with the new Cordleyrac Wall Bracket. Made of heavy gauge steel, the rack is designed to hold Cordley water coolers off the floor, at any desired height. Sanitation is thus improved and cleaning facilitated. Cordley & Hayes, 443 Fourth Ave., New York 16.

For more details circle #735 on mailing card.

Protective Paint for Metal Surfaces

Rust-tard is a new dual purpose protective paint for metal surfaces. In one coat, metal receives a zinc chromate primer and an aluminum finish. It stops rust and corrosion and gives the metal a finished aluminum surface coat. Labor is saved through the one-coat process which can be applied over a rusted surface with a minimum of preparation. Garland Company, 3748 E. Ninth St., Cleveland 5, Ohio.

For more details circle #736 on mailing card.

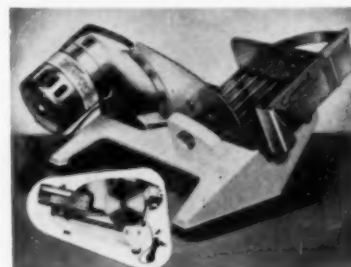
Electric Slicing Machine Is Low in Price

Efficient operation, Underwriter Laboratories approval and low price are

(Continued on page 88)

some of the outstanding features of the new General Model 750 Slicing Machine. The full gravity-feed machine is compact with large capacity. The new machine is heavy enough to stand firmly on rubber feet during operation, yet light enough to be lifted from place to place as needed. It has safety features at the platform, at the prong and on both sides of the knife.

The stainless steel knife is made to maintain a fine edge without being brittle. The sharpener is so designed that any operator can keep the knife edge sharp. The new design permits



using tray, platter or waxed paper beside the slicer to catch sliced food and food juices. There are no corners or crevices where scraps or particles of food can gather, thus simplifying cleaning and sanitation. General Slicing Machine Co., Inc., Walden, N. Y.

For more details circle #737 on mailing card.

AMERICAN



Floor-kings are only part of the New No. 1 Maintenance Machine line!

Now — pick the *Vacuum* for your job!

Visit your American Dealer Sept. 19-23—and every time you need cost-saving equipment for better maintenance!



American Water Pick-Up
Wet, 12 gal.; dry, 1 1/4 bu.



American Wet or Dry Vacuum
Wet, 9 1/2 gal.; dry, 1 1/2 bu.



American Industrial Vacuum
Wet, 12 gal.; dry, 1 1/4 bu.



American Small Vacuum
Wet, 2 gal.; dry, 4 1/2 gal.

Versatile, years ahead features . . . American Vacuums are designed to look good in an office, engineered to perform anywhere . . . respond to your slightest movement . . . powerful suction gets deep-down dirt, dries scrubbed floors automatically . . . light weight, rugged . . . dozens of job-tested attachments for quick, thorough cleaning of rugs, floors and off-the-floor objects . . . American Vacuums are No. 1 in performance, all sizes for any job, any budget! Write for on-the-job demonstration, no obligation.

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LIFETIME beauty and service



SCHOOL FURNITURE SCHOOL LOCKERS

**ASE QUALITY...CHEAPER BY
THE YEAR AS THE YEARS GO BY**

For new schools...for old schools...you couldn't make a wiser choice. ASE Steel School Furniture and School Lockers have proved themselves on every type of installation...all over the country. Write now for more information about this outstanding line of quality school furniture and equipment.



No. 6629
PRINCIPAL'S DESK



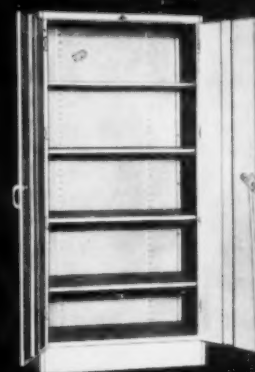
SINGLE-TIER
LOCKERS



No. 6647
TEACHER'S DESK



No. 835
PRINCIPAL'S CHAIR



No. 3487
STORAGE CABINET



DOUBLE-TIER
LOCKERS



BOX LOCKERS



No. 5401
FILE



No. 6276
LIBRARY TABLE



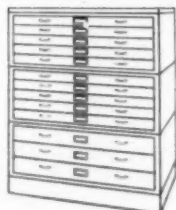
No. 810 UTILITY CHAIR



No. 840
Secretary's
Chair



No. 540
Drafting
Chair



Blueprint File

ALL-STEEL EQUIPMENT INC., Aurora, Illinois

Please send complete information on

School Furniture ☐ Desks and Tables ☐ Chairs ☐

Files ☐ Storage Cabinets ☐ Lockers ☐

We are building a new school ☐

Adding Equipment ☐

Name _____

School _____

Address _____



ALL-STEEL EQUIPMENT INC., Aurora, Illinois

Write for complete information. There's an ASE dealer near you.

What's New . . .

Cloverlane Dinnerware of Melamine Plastic

Designed by Jean O. Reinecke, S.I.D., Cloverlane melamine dinnerware is



manufactured by a firm with years of experience as molders of plastic materials. The new dinnerware incorporates innovations of design which make it especially adaptable to modern dishwashing. There are no sharp corners or edges and bottom rims have notches for improved drainage and aeration.

Melamine, a thermosetting plastic molded under elevated temperatures and pressures, is tough and stable and produces dinnerware with high resistance to breakage even in institutional food service and dish handling operations. Low thermal conductivity makes plates hold heat longer and keep food warm. The dinnerware is light in weight and has practically no rattle and clatter in handling. The Cloverlane design was

developed especially for institutional and other mass feeding operations. The well-balanced design is functional as well as attractive and stacks easily. The contour styling makes the dishes nest low and efficiently for maximum space saving. The dinnerware is chip-resistant and is highly polished for maximum sanitation. **Chicago Molded Products Corp., 1929 N. Kolmar Ave., Chicago 51.**

For more details circle #738 on mailing card.

Ice Cube Maker Has Large Capacity

Up to 450 pounds of standard sized cubes or cubelets are manufactured automatically in a 24 hour period with the compact new Frigidaire ice cube maker. Cubes are dropped into the storage bin ready for use. When the bin is filled, the unit shuts itself off. When the 375 pound storage bin is partially emptied, the ice making cycle begins again.

Cutting grids for cubes and cubelets are interchangeable. Sizes vary from 1½ by 1¼ inches to ¾ by ¾ inches with thickness variable from ¼ to ¾ inches as desired. The attractively styled cabinet is heavily insulated and occupies only 48½ by 29½ inches of floor space. The unit is designed to meet maximum sanitation requirements. **Frigidaire Div., General Motors Corp., Dayton, Ohio.**

For more details circle #739 on mailing card.

(Continued on page 90)

Storage Cabinet Has Sliding Doors

Specifically designed to remove the hazards of protruding doors, the new Star Steel Sliding Door Cabinet features finger tip control of the roller bearing doors. They slide easily for access to the shelves or for closing. Constructed of heavy gauge steel, welded for strength, the cabinet is finished in dark green, gull gray, mist green or tawny tan baked-on enamel. Sliding Door Cabinets are available in a number of sizes for



storage, wardrobe and counter use. The shelves are adjustable as desired on two inch centers. **Star Steel Equipment Co., Inc., 117 14th Rd., College Point, N. Y.**

For more details circle #740 on mailing card.

HOW TO END LEAF and MOWING PROBLEMS...



This is the **MULCH-VAC 25 hp model**. It vacuums up, cuts into fine mulch and returns leaves to ground in a single fast operation. Tractor drawn, 6'5" pickup cleans up to 30 acres in 8 hr. day. Attachments for loading leaves available for this model. Stones, heavy twigs, bottles and similar foreign materials that would damage most equipment will not enter this machine. Write for list of colleges and universities using MULCH-VAC.



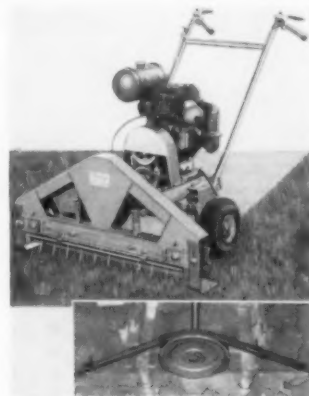
This is the **6 hp MULCH-VAC**, the self propelled model so popular for localized leaf and litter removal jobs—available with bag, suction hose and SNOW removal attachments . . . and

NOW AVAILABLE WITH THIS NEW MOWING ATTACHMENT

employing a revolutionary but tested and proven principle using Cutting Blades on a V-Belt, the

RIBBON-CUT MOWER

Cuts grass smooth, even, fast . . . wet or dry with full 33" wide cut.



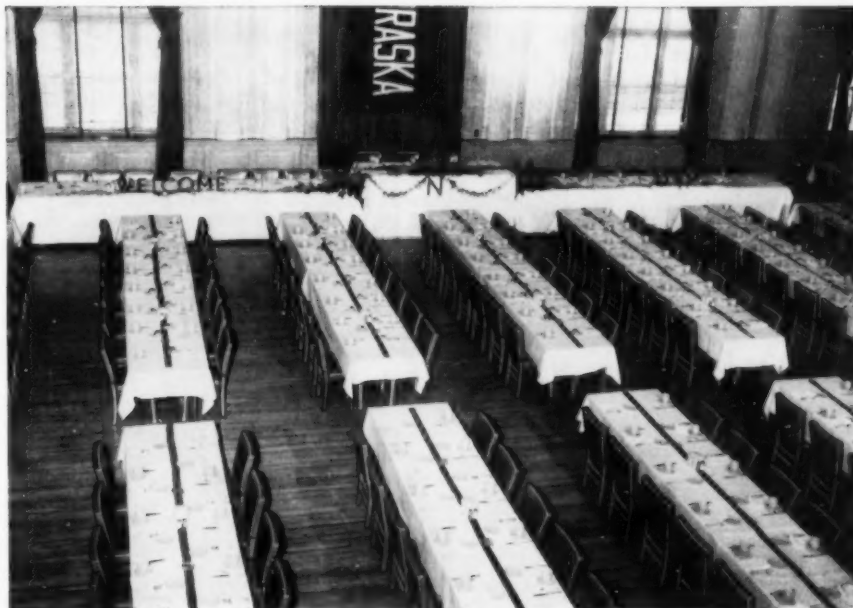
Write for complete information today to **ATWATER-STRONG CO., Atwater, Ohio**

PHONE ATWATER 7-2344

RASTETTER

Model 451
SOLID KUMFORT
Chairs That Fold

In the banquet hall of the
Student Union Building at
the University of Nebraska.



SOLID KUMFORT *chairs that fold* in the Student Union, UNIVERSITY OF NEBRASKA



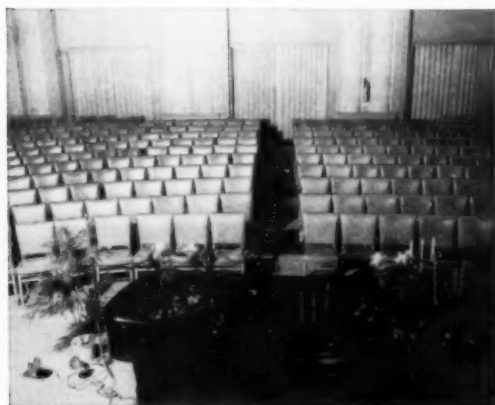
The Student Union Building at Lincoln, Nebraska.

THEY CHOSE Model 451 because they wanted comfortable seating that will last a lifetime! These chairs are rugged . . . with select hardwood frames and the famous Rastetter Hinge and Brace construction. Beautifully designed, they're ideal for use in schools, auditoriums, cafeterias, hospitals, hotels and clubs, where use often means abuse.

Rastetter Solid Kumfort Chairs That Fold are made in both Wood and Magnesium in many attractive styles. They may be moved quickly and easily where rooms are used for several purposes. Write for Portfolio showing complete line and giving many interesting facts on better seating.

LOUIS RASTETTER & SONS COMPANY

1326 WALL STREET • FORT WAYNE 1, INDIANA



Here Solid Kumfort Chairs that fold are shown
in the auditorium.

Better chairs for
every purpose . . .
whether you ever
told them or not!



FOLD FLAT



Model 451
Wood

What's New . . .

Paper Cup Has Porcelainized Finish

The new Plasti-Cup paper cup features a bumper-roll edge for pleasant, easy drinking. Because the cup is completely porcelainized, it gives true flavor protection for hot beverages. Sealright Co., Inc., Fulton, N. Y.

For more details circle #741 on mailing card.

Specialist Tape Recorder Has Three Motors

Featuring the "Miracle 2000" sound system, the Specialist portable tape recorder produces realism in sound repro-



duction. The use of three separate motors assures a constant, uniform speed and faster forward and rewind operations.

The Specialist is suitable for training voice, music and speech students and for the teaching of a foreign language. For increased volume in auditoriums or large classrooms, the recorder may be played through external speakers or it may be used as a PA system. Bell & Howell Co., 7100 McCormick Rd., Chicago 45.

For more details circle #742 on mailing card.

Glass Rack Has Plastisol Lining

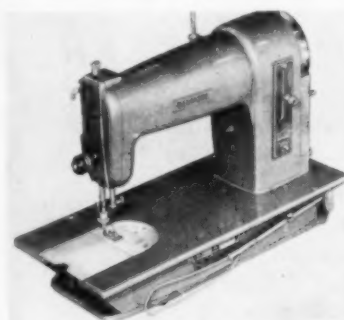
Sani-Stack racks for glasses are now available with plastisol lined compartments to protect against glass breakage. The resilient plastisol lining for each glass compartment absorbs shock, prevents scratching and reduces noise to a minimum. The lining is not affected by hot water or detergents and does not change quality, even when subjected to continued exposure to hot water in mechanical dishwashing. Metropolitan Wire Goods Corp., 70 Washington St., Brooklyn 1, N.Y.

For more details circle #743 on mailing card.

Kenmore Sewing Machine for Classroom Use

The new Model 53 Sears Kenmore Rotary Sewing Head is made of lightweight aluminum with a fully enclosed base. It has many features for classroom

use and can be used as a portable machine if desired. It has Underwriter Laboratories approval and operates on



any 110-120 volt, 25, 50 or 60 cycle alternating or direct current outlet.

Features of the new model include new governor control for complete control of sewing speed with quick response, double lock stitch sewing both forward and backward, adjustment to any thickness of material, glare-free lighting over work area, easy threading, magnetic bobbin holder, automatic bobbin winder, easy stitch control, and it darns without special attachments. The new machines are especially adapted to classroom use for teaching and for special projects. Sears, Roebuck & Co., 925 S. Homan Ave., Chicago 7.

For more details circle #744 on mailing card.

(Continued on page 92)

HOW CLEAN IS CLEAN?

BALMASEPTIC Top-Quality ANTISEPTIC Liquid Soap



Smooth, gentle BALMASEPTIC contains the G-11 Brand of Hexachlorophene. Regular use reduces bacterial count on skin as much as 95%.

Fragrant BALMASEPTIC, with its rich, creamy lather is refreshing — acts as a TRUE DEODORANT — promotes

long-lasting freshness. Excellent for both hand-washing and shower use.

Stable BALMASEPTIC stores well—without loss of clarity, fragrance or dispensing qualities.

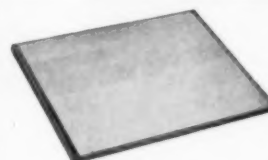
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MAYLINE



Metal Edge Drawing Board

Mayline Invites Your Inquiries

Inquire about our attractive prices on: Metal-edge drawing boards, drafting and art tables, folding tables, work benches, and "Gem" pedestal table. Letters answered promptly.



C-7702 Art Table



C-7703-B Drafting Table

Symbol of  Superiority

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MAYLINE

New
booklet shows
how replacement
of worn-out
windows with
**OWENS-ILLINOIS
GLASS BLOCK**
can mean



***Lower maintenance costs
Better seeing conditions
More efficient heating for
your school regardless
of its age***

IF YOU'RE FACED with the problem of worn-out window sash, mail the coupon for this new free booklet. See how sash replacement with modern-looking, cost-cutting Owens-Illinois Glass Block panels have proved to be an immediate and permanent solution for schools throughout the country. Do it today and we'll send it by return mail.

School Modernization

with
OWENS-ILLINOIS GLASS BLOCK

This book shows, in illustrated case histories, how schools throughout the country have solved modernization problems by the use of glass block. It shows that the installation of glass block panels saves money by reducing fuel bills and maintenance costs, and greatly improves the environment of students and teachers.

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Kimble Glass Company
subsidiary of Owens-Illinois
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Toledo 1, Ohio

Please send your new free booklet, "School Modernization with Owens-Illinois Glass Block."

Name

Address

City

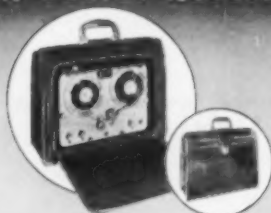
Zone State

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What's New ...

New Secret Recorder



with Built-In Microphone and Playback Facilities

Available for the first time, a really secret and dependable tape recorder for your investigative work with full assurance of catching every word and whisper. Specifically designed for all forms of fool-proof sure-fire investigative work. Completely self-contained, operates anywhere!

Briefcase ingeniously camouflaged to open, without disclosing recorder in operation. In-built super-sensitive microphone plus new circuits record all sounds from a whisper to a roar. Picks up whispers at a distance of 12 feet and ordinary speech at 100 feet. Secret latch switch operates recorder. Provides 1½ hours of uninterrupted recording time. Built-in headphone playback. Tapes also play back on any 1½ ips recorder.

Available to all legitimate commercial, professional, industrial, municipal, state and federal investigative agencies.

For additional technical information and direct factory prices write to Dept. CU

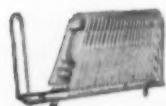
AMPLIFIER CORP. of AMERICA
398 Broadway, N. Y. 13, N. Y.



Direct Prices & Discounts to Schools, Churches, Clubs, Lodges and All Organizations



Full line of folding chairs



Above: Transport-Storage Truck No. TSC

Right: Transport Truck No. TF

MONROE TRUCKS

Transport and store your folding tables and chairs the easy, modern way with Monroe All-Steel Trucks. Each truck is designed to handle either tables or chairs. Construction of Truck No. TSC permits storage in limited space.



WRITE FOR BEAUTIFUL NEW CATALOG, No. 300, PRICES AND DISCOUNTS

THE Monroe COMPANY
77 CHURCH STREET, COLFAX, IOWA

Wood Construction for "Princeton" Furniture

Constructed entirely of wood, the S & C "Princeton" line of school furniture is styled by Gordon Hrach. It supplements the S & C "Yale" line which combines tubular steel and wood. The S & C "Princeton" Split Top Desk No. 7241TT is made of Northern Hard Maple in natural finish or in gray, coral, green or blue. The line is designed for



durability, comfort and contemporary styling. The "Posture-Perfect" furniture is available in student and teacher's desks, desks for student typists, large classroom tables, chairs and a full line of office furniture for administrators and principals.

The Split Top Desk can be used level or with a 10 degree slope. The top is 1 1/16 inch thick with double pencil groove. It is sturdy and attractive and has interior pencil tray. The finish is tough and highly resistant and formulated for long, hard wear. Chairs in the line have "hand-holds" in the backs for easy moving. All corners in the line are shaped and rounded to protect both students and furniture. **School & College Furniture, Inc., div. of The B. L. Marble Chair Co., Bedford, Ohio.**

For more details circle #745 on mailing card.

Swing-Bac Divan for Dormitory Use

Comfortable seating and sleeping are combined in the new Harvard Swing-Bac Divan. The regular twin-sized spring and mattress rest on a bedding carrier built low to the ground. It is easy to move for cleaning and bed making since it is set on casters tucked under the divan.

A combination shelf and bolster support is turned down on top of the divan during the day, narrowing the seating space to 21 inches for complete comfort in sitting. The pivotal shelf drops down parallel to the wall, completely out of the way, when the unit is used as a bed. It operates with one quick movement. In position during the day, the shelf can be used for lamps, books,

radio and for other uses. The unit is of all-steel construction. **The Harvard Manufacturing Co., 6201 Woodland Ave., Cleveland 4, Ohio.**

For more details circle #746 on mailing card.

Flash-Dri Feeder Dispenses Drying Agent

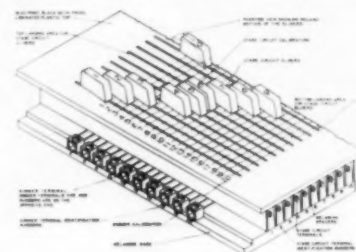
The Klenzade Flash-Dri Feeder economically proportions and injects Klenzade Flash-Dri liquid drying agent into the final fresh rinse water of spray-type dishwashing machines to speed drying and ensure uniform drainage of the rinse water. Streaks and spot formations are eliminated for sparkling tableware. The unit is compact and requires no attention except occasional filling of the tank when indicated by the liquid-level gauge. **Klenzade Products, Inc., Beloit, Wis.**

For more details circle #747 on mailing card.

Quick-Connect Panel for Stage Lighting

Stage lighting and dimming equipment can be easily operated when the Davis Quick-Connect Panel is used. It provides a simplified method of connecting individual or combinations of stage light circuits to any of the dimming control circuits of a switchboard. Designed for use in schools and by other non-professional groups, the panel eliminates patch cords and plugs. Cross-connection is accomplished with a series of vertical sliders connected to the stage light circuits. These are calibrated to make contact with horizontal busses connected to the dimmers. The mechanism is completely enclosed for safety and dead front operation.

The Quick-Connect Panel is available in two Davis Dimmer Control Boards,



a console model and a wall model. Both units have fifteen dimming constant circuits and thirty flexible stage circuits. The panel permits split-second connection of any stage circuit to any dimmer, complete flexibility for all stage circuits and it can be operated by students without danger of accidents. The complete lighting layout is visible at a glance with the new panel which can be cleared in one sweep. **Ariel Davis Mfg. Co., 3687 S. State St., Salt Lake City, Utah.**

For more details circle #748 on mailing card.

(Continued on page 94)

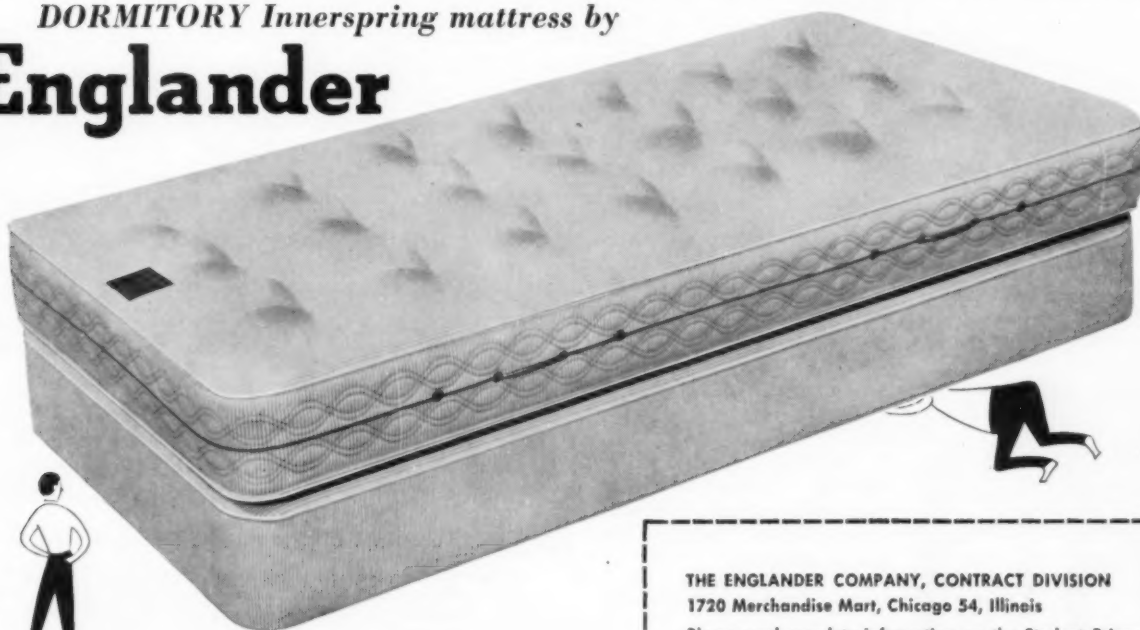
ANY
WAY
YOU
LOOK
AT
IT



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DORMITORY Innerspring mattress by

Englander



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Now for Complete Informa-
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Products for Schools and
Colleges.*

QUALITY

Englander's expert design and construction know-how plus the finest quality materials make the Student Prince dormitory innerspring mattress the best bedding investment for your budget.

COMFORT

Englander's special Red-Line* innerspring construction features exclusive, independent coil action—gives students firm support, yet is comfortably resilient without sway. Layers of cotton felt provide smooth, restful, cushiony relaxation.

ECONOMY

Priced for the most demanding school budget, the Red-Line Student Prince mattress assures years of top grade, top comfort usefulness. Compare the cost with the years of service received. Long after ordinary dormitory mattresses have worn out the Student Prince will continue to give added years of comfort and extra wear.

THE ENGLANDER COMPANY, CONTRACT DIVISION
1720 Merchandise Mart, Chicago 54, Illinois
Please send complete information on the Student Prince
and other Englander sleep products for schools and
colleges.

School Name _____

Your Name _____ Title _____

Address _____

City _____ Zone _____ State _____

C955

What's New...

Food Serving Equipment for Back-Bar Installation

A wide selection of food service units is offered in the new "Add-a-Star" line of Back-Bar equipment. The all-metal welded equipment includes cold salad units, sandwich units, buffet units, waitress stations, refrigerated bases, updraft and downdraft equipment stands, hot food tables, and a large selection of miscellaneous stands and enclosures.

The equipment is so constructed that every unit lines up with the others and can be used interchangeably in a back-bar assembly. The sandwich unit has a roomy refrigerated base cooled by a thermostatically controlled condensing unit. All exposed surfaces and the interior are of stainless steel and hardware is chrome plated. Other units in the line are similarly constructed for ease of cleaning, long wear and sanitation. **Star Metal Manufacturing Co. Inc., Trenton Ave. & Ann St., Philadelphia 34, Pa.**

For more details circle #749 on mailing card.

Towel Dispenser Kits for Waste Receptacles

Defacing of walls and steps from dispenser to waste receptacle are eliminated with the Bennett Twin Towel Dispenser Kits. Paper towels feed out from both sides of the new kits which are easily clamped on top of the Bennett Self-

closing Waste Receptacles. Traffic thus moves faster and with greater efficiency.



The kits are available in white enamel or chrome finishes. **The Bennett Mfg. Co., Alden, N. Y.**

For more details circle #750 on mailing card.

Pneumatic Tube System Is Prefabricated

A two-station pneumatic tube system is now available in kit form for installation by the regular maintenance personnel in any type of building. Available at the cost of the equipment alone,

(Continued on page 96)

the complete packaged kit assembles into a two-way system connecting points up to 130 feet apart. It is pre-engineered so that it can be laid out and installed by following the simple instructions provided.

The package Airtube system can be installed in a variety of configurations to connect points on either the same or different floor levels. Messages and other paperwork are moved through the tubes in air propelled carriers at a speed of 20 feet per second, providing fast, economical and convenient paperwork transit within the institution at any time of the day or night, without extra personnel. **Lamson Corporation, Syracuse, N.Y.**

For more details circle #751 on mailing card.

Improved Feed Doors on Incinerators

Two new feed doors are available on Winnen Incinerators. The Guillotine door is a single sheet of heavy gauge steel with a refractory lining which slides up to open. The new double feed doors open in the conventional manner. Both types are counterbalanced for easy operation and are oversized to receive entire crates and boxes. **Winnen Incinerator Co., 932 Broadway, Bedford 32, Ohio.**

For more details circle #752 on mailing card.

durable
AND
Smart
FURNITURE

WIDE ASSORTMENT OF
Tables, Chairs and Servers

for complete dining room installation. Wood and metal base tables in all sizes and types of tops. Many other chairs available.

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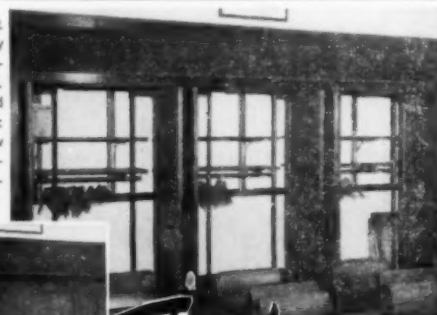
Side Chair No. 8047
comfortable saddle wood seat.

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SHEBOYGAN, WISCONSIN



PERMANENT DISPLAYS: Chicago — Space 1650 — Merchandise Mart
New York — Decorative Arts Center — 305 East 63rd St. (9th Floor)

One of 24 Fairhurst Wardrobes originally installed at St. Benedict's School, NYC. Right: Doors open and out of way. Bottom: Closed doors show flush surface. Gustave Steinback, Architect.



Fairhurst®
DISAPPEARING DOOR
SCHOOL WARDROBES

No Maintenance expense in 24 Years' Constant Use!

Use by generations of school children is proof indeed of a product's durability and efficiency. Such proof is provided by a letter from Rev. Albert Heuring, pastor of St. Benedict's parish, in which he states:

"Your company installed the wardrobes in our school in 1931. They have been in use since that time and are as good today as the day you installed them."

- Accommodates apparel of 45 pupils in 2' deep by 12' space •
- Interior unobstructed with doors open or closed • Opened, doors are entirely out of way • No floor track

Write for further details

John T. Fairhurst Co., Inc.

45 West 45th Street

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44 YEARS OF LEADERSHIP IN FOLDING WALLS

QUIET...

Library's Silent Monitor Is Effective Study-Aid



What student can do justice to his assignments, when he is constantly victimized by that least-subtle of distractions: **NOISE**. In college libraries, where undisturbed concentration is all-important, that very effort is often hindered by errant sounds within the library proper, plus those filtering in from corridors and adjacent rooms. Yet many schools across America are finding an efficient countermeasure . . . in Acousti-Celotex Sound Conditioning.

Low-Cost Answer—The spacious library of Wayne University features a sound-absorbing ceiling of Acousti-Celotex Cane Fiber Tile on an Acousti-Line® Suspension System. (This unique installation permits an advantageous arrangement of lighting fixtures, as well as easy access to air diffusers, ducts, etc.) *Wherever* Acousti-Celotex Tile is installed, in libraries, classrooms, lecture halls, labs, gyms, auditoriums, cafeterias . . . *quiet comfort* is the beneficial result. Studying, listening, learning are helped considerably.

Easy Maintenance—Acousti-Celotex Tile is quickly put up in existing buildings or during new construction, requiring no special maintenance thereafter. It has extremely high sound-absorption value, and a varied choice of attractive surfaces. Can be washed *repeatedly* and painted *repeatedly* without altering its sound-absorbing capacities.

Mail Coupon Now! . . . for a Sound Conditioning Survey Chart that will bring you a *free analysis* of the noise and acoustical problems in your school, plus a free factual booklet, "Sound Conditioning for Schools and Colleges." No obligation, of course.

Wayne University Library—Architect: Suren Pilafian, Detroit, Michigan (Frank Montana Associate). Acousti-Celotex Contractor: R. E. Leggette Co., Detroit, Mich.

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Products for Every Sound Conditioning Problem—The Celotex Corporation, 120 S. LaSalle St., Chicago 3, Illinois • In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec.

Vol. 19, No. 3, September 1955

Mail Now!

The Celotex Corporation, Dept. T-95
120 S. LaSalle St., Chicago 3, Illinois

Without cost or obligation, please send me the Acousti-Celotex Sound Conditioning Survey Chart, and your booklet, "Sound Conditioning for Schools and Colleges."

Name _____
Institution _____
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City _____ Zone _____ State _____

What's New . . .

Product Literature

- The organization, background and functions of The Prophet Co., 707 Fisher Bldg., Detroit 2, Mich., national food service and consultant firm, are described in a new 24 page brochure entitled, "How Many of Your People Eat?" How the organization has grown to serve institutions and industry with food service in more than 140 installations is discussed. The complex factors involved in large scale feeding programs, the advantages of specialized food services, and the importance of scientific food planning, preparation and service are some of the subjects discussed.
For more details circle #753 on mailing card.
- The complete line of **Samsonite Colorful, Mobile School Furniture** designed by Russel Wright is presented in a new 28 page catalog issued by Shwayder Brothers, Inc., 4270 High St., Detroit 29, Mich. The story of Samsonite and its expansion, Russel Wright's statement on "The Environment of Education" and a discussion of the colors used in Samsonite furniture precede descriptive information and illustrations of items in the line of school furniture. Design and construction data are presented in detail and specifications are given on all items in the complete classroom line. Drawings of colorful, cheerful classrooms offer suggested room arrangements.
For more details circle #754 on mailing card.
- The complete Multi-Clean line is described and illustrated in an attractive broadside released by Multi-Clean Products, Inc., 2277 Ford Pkwy., St. Paul, Minn. Entitled "Here's Everything You Need for Better Floor Care," the eight page broadside includes a liquids chart describing 24 floor liquids for use on different types of floors.
For more details circle #755 on mailing card.
- Three experimental cookery studies in quantity food preparation were sponsored by the Evaporated Milk Association, 228 N. La Salle St., Chicago 1. A collection of "Tested Recipes for 50 and 100 Servings" is the result of the most recent study and is available without cost to those concerned with quantity food production. The recipes were developed by Fern W. Gleiser and Alice F. Teasdale, institution economics and management, School of Business, University of Chicago. In developing the recipes attention was given to cost of ingredients, amount of labor and kind of equipment required.
For more details circle #756 on mailing card.
- "Solving Roofing Problems," a new brochure released by The Tremco Mfg. Co., 8701 Kinsman Rd., Cleveland 4, Ohio, will be of interest to maintenance men. Illustrated by photographs, drawings and diagrams, the 32 page brochure is divided into 15 sections and provides a table of contents to facilitate reference.
For more details circle #757 on mailing card.
- **Catalog R-55 on Wayne Rolling Gymstands** illustrates and describes design and construction features of this functional, efficient gymnasium seating line. Economies of indoor seating, factors to consider in selecting, planning aids and architectural specifications are included in the booklet which is designed for architects and school officials planning gymnasium seating for new or existing buildings.
For more details circle #758 on mailing card.
- A typing guide for transferring easily from manual to electric typewriters is offered in the new booklet, "The Key to Relaxed Typing." It is one of two booklets on how to operate electric typewriters. "Electric Typewriting for the Classroom Teacher," the second booklet, contains a complete teacher's lesson plan for electric typewriter instruction, including transferring from manual to electric, training a beginner on the electric, and transferring from electric to manual. The booklets are the result of a long program of study and research and are available through the School Dept., Royal Typewriter Co., 2 Park Ave., New York 16.
For more details circle #759 on mailing card.
- "Foamglas in Thin Wall and Sandwich Panel Construction" is discussed in a new brochure brought out by Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh 22, Pa. Photographs and details of important projects utilizing this technic, including fabrication and job data, are also contained in the 12 page brochure.
For more details circle #760 on mailing card.
- **Technical Bulletin H-1** is a completely revised bibliography of the literature on G-11 (Hexachlorophene). Published by Sindar Corp., 330 W. 42nd St., New York 36, the bulletin contains references and abstracts of scientific and trade articles and patents. The index is sub-divided to give the reader easy access to his subject of interest.
For more details circle #761 on mailing card.
- A booklet of quantity recipes for eye and appetite appeal has been published by The Nestle Co., Inc., 2 William St., White Plains, N.Y. Fourteen recipes show how Maggi's Seasoning, Granulated Bouillon Cubes and Granulated Chicken Bouillon Cubes can be used in the preparation of institutional foods.
For more details circle #762 on mailing card.
- The rules to follow when laying kiln-dried hardwood flooring are contained in "Please Don't," a leaflet brought out by the Maple Flooring Manufacturers Association, 35 E. Wacker Dr., Chicago 1. The first part of the leaflet contains suggestions for the installation and care of Northern hardwood flooring. A list of simple precautions to take in handling hardwood flooring at the job site is found in the second part.
For more details circle #763 on mailing card.
- A 15 minute telecast will be arranged for showing over local channels in 300 cities in the United States to help teach table tennis. Administrators, board members, principals or physical education directors and coaches can request a television showing in their city. The new TV show consists of a quarter hour sound film entitled "Table Tennis Techniques." It gives a step-by-step explanation of the fundamentals of championship table tennis and incorporates many helpful hints on how to play a better game. Requests should be sent to Mr. Edmond Heller, Director of Merchandising, Harvard Table Tennis Co., 60 State St., Boston 9, Mass.
For more details circle #764 on mailing card.
- A film demonstration in color, showing how to make top quality baked foods with portion cost control and time-saving methods is offered in "The Magic of Mixes." Narrated by John Cameron Swayze, the 16 mm sound film was prepared by Pillsbury Mills, Inc., Institutional Division, Minneapolis 2, Minn. It tells the story of baking mixes and offers new food ideas and menu suggestions, with information on how to figure portion costs.
For more details circle #765 on mailing card.
- The 1955 catalog of **Fenestra Architectural Division Products** shows the complete line of steel windows for schools, hospitals and other institutions. Released by Detroit Steel Products Co., 3193 Griffin St., Detroit 11, Mich., the 40 page catalog is profusely illustrated and presents information on types, sizes, specifications, installations, construction and uses.
For more details circle #766 on mailing card.
- **Technical Data Folio #551 on Floor Covering** has been prepared by Hercules Flooring Co., 247 W. 16th St., New York 11. Included in the portfolio is information on facts to consider when buying flooring and on research, a floor performance chart and flooring estimate, and a catalog on Flexachrome vinyl plastic-asbestos floor tile manufactured by The Tile-Tex Division, The Flintkote Co. Illustrations in full color show the patterns available in Flexachrome and installations in schools, hospitals, offices and other institutions are pictured.
For more details circle #767 on mailing card.
- New and old uses of plastics in construction are discussed in a booklet, "Plexiglas Acrylic Plastic in Architecture," published by Rohm & Hass Company, Washington Square, Philadelphia 5, Pa. The 16 page booklet is illustrated by photographs and drawings and covers types of Plexiglas sheets, architectural characteristics, fabrication, lighting fixtures and luminous ceilings, window glazing, partitions and other uses of the product.
For more details circle #768 on mailing card.

PROD

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Page an

Adams & Westlake Company
Aluminum Windows

All-Steel Equipment, Inc.
School Furniture

American Bitumuls & Asphalt Compa
Tennis Court Surfacing Mater

American Chair Company
School Furniture

American Floor Surfacing Machine
Floor Maintenance

American Hydrotherm Corporation
Central Heating System.....

Amplifier Corporation of America
Tape Recorder

Atwater-Strong Company
Mower & Leaf Mill.....

Barreled Sunlight Paint Company
Paints

Bolta Products
Food Service Equipment...C

Brown Company
Towels & Tissues.....

Burroughs Corporation
Accounting Machines

Celotex Corporation
Acoustical Material

Clarín Mfg. Company
School Furniture

Clarke Sanding Machine Company
Floor Maintenance

Dage Television
Teaching Aid

Davenport & Son, Inc., A. C.
Bulletin & Directory Boards

Ditto, Inc.
Duplicator

Dolge Company, C. B.
Liquid Soap

Eastman Kodak Company
Projector

Englander Company, Inc.
Dormitory Mattress

Fairhurst Company, Inc., John T.
School Wardrobes

TO REQUEST PRODUCT INFORMATION FOLD THIS FLAP OUT AND USE THESE CARDS

(We pay the postage)



The two cards below are detachable and are addressed to us. With this flap folded out you can turn through the magazine for the items on which you want further information.



When, in either an advertisement or "What's New" you locate the product, turn to the index to advertisements on the preceding page or to the index of "What's New" items (right) where you will find the key number for the item. Items advertised are listed alphabetically by manufacturer. "What's New" items are in Key Number order. Circle the corresponding key number on the card below for each item in which you are interested. The second card is for the use of someone else who may also want product data.



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TO REQUEST PRODUCT INFORMATION FOLD THIS FLAP OUT AND USE THESE CARDS

(We pay the postage)

The two cards below are detachable and are addressed to us. With this flap folded out you can turn through the magazine for the items on which you want further information.

When, in either an advertisement or "What's New" you locate the product, turn to the index to advertisements (left) or to the index of "What's New" items on the following page, where you will find the key number for the item. Items advertised are listed alphabetically by manufacturer. "What's New" items are in Key Number order. Circle the corresponding key number on the card below for each item in which you are interested. The second card is for the use of someone else who may also want product data.

Detach and mail — no postage required.

September, 1955

Please ask the manufacturers, indicated by the numbers I have circled, to send further literature and information provided there is no charge or obligation.

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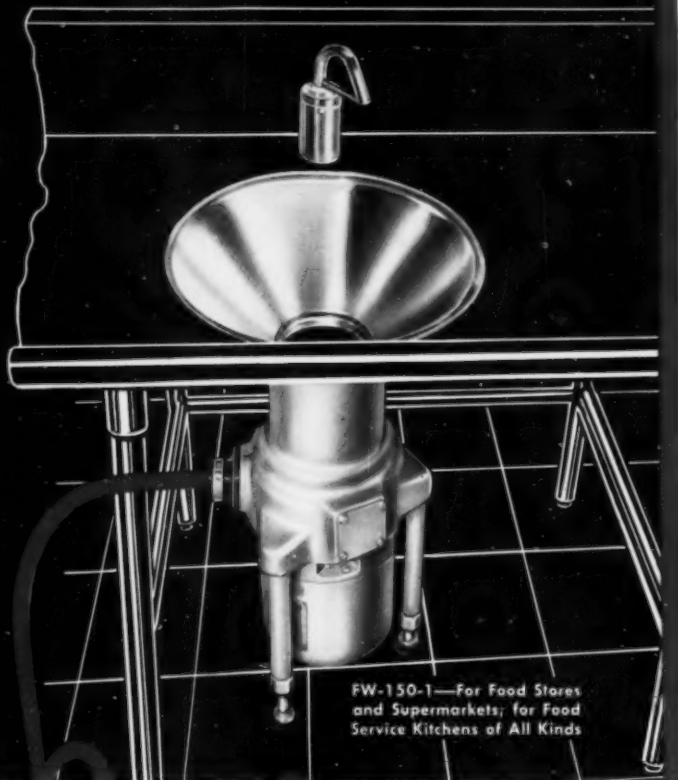
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The Nestle Co., Inc.
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Maple Flooring Manufacturers Assn.
- 764 "Table Tennis Techniques"
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Pillsbury Mills, Inc.
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- 767 Floor Covering
Hercules Flooring Co.
- 768 "Plexiglas Acrylic Plastic"
Rohm & Haas Co.



FW-150-1—For Food Stores and Supermarkets; for Food Service Kitchens of All Kinds



Here's your answer to the inefficiency, expense, mess and general unpleasantness of old-fashioned handling and periodic storage of food wastes. Now you can "pipe-line" those problems down the drain!

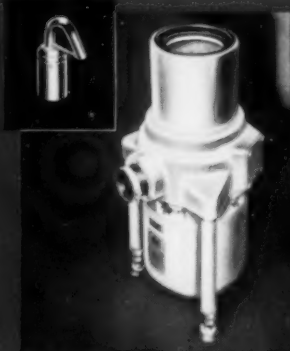
With the most power for its size, the new Hobart Food Waste Disposer gives you efficiency unrivaled by other vertical commercial units. With its unique 4-stage centrifugal cutting action (at 1750 RPM), and powerful Hobart 1½ H.P. motor, all preparation waste or other food waste can be quickly disposed of. All waste, without separation—from napkins to toothpicks; ground coffee to cooked bones.

This disposer can be completely filled when idle. It cannot be over-fed! It is self-feeding—it is not necessary to keep pushing or prodding the waste into the cutting mechanism. The water action combined with cutting action automatically cleans unit, without disassembly, after each use—eliminating all odors.

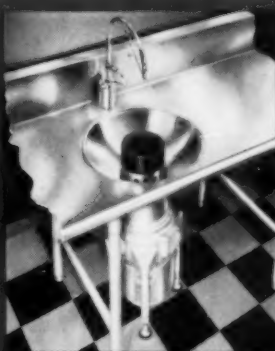
Pipe-line

To Higher Sanitation Standards...
To Lower Costs, Greater Convenience

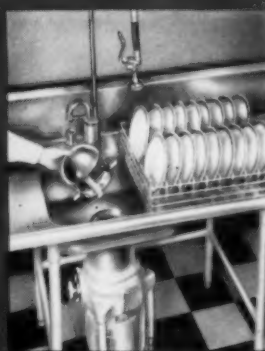
Let Hobart Solve Your Food Waste Problems



FW-150-4—Food Waste Disposer with Controls and Air-Gap Type Water Inlet (Basic Unit)



FW-150-2—Same as FW-150-1, with Scrapping Block and Overhead Gooseneck Added



FW-150-3—For Rack-Type Dishwashing—or Central Food Waste Disposal

Ask your Hobart representation today for more information on this and other units comprising the *complete* Hobart line. Or write Dept. ADV., Troy office, for detailed spec sheets and phantom illustrations . . .

. . . *The Hobart Manufacturing Company, Troy, Ohio.*

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COMPLETE
INFORMATION
NOW!**



The World's Largest Manufacturer of Food, Kitchen and Dishwashing Machines

HOBART PRODUCTS

DISHWASHERS • DISH SCRAPPERS • GLASSWASHERS
DISPOSERS • PEELERS • MIXERS • FOOD CUTTERS
MEAT CHOPPERS • MEAT SAWS • TENDERIZERS
FOOD SLICERS • COFFEE MILLS • SCALES

*It's Hobart . . . for Consolidated Planning,
Purchasing and Servicing . . . Kitchen-Wide!*



How to Get the Most from Your Fuel Dollars

It takes the right control system for waste-free operation of heating and cooling equipment

Most of us are well aware of the money-saving possibilities of installing the most efficient possible heating, ventilating and air-conditioning equipment. But that's only the *first* step towards fuel economy!

What ultimately determines your operating costs is the way you *control* this equipment—with the proper thermostats, valves, dampers and other control apparatus. Obviously, even the most efficient heating or air conditioning plant actually saves you very little if you are needlessly wasting part of its output.

The better the control system, the more money you save in operating costs. And for the *finest* control, there's only one possible answer—Johnson Control. The reasons are simple. First, Johnson gives you the benefit of over 70 years' experience in solving the temperature control problems of all kinds of college and university buildings—*more specialized experience than anyone else!*

BETTER ENGINEERING PAYS OFF

Equally important, *every* Johnson System, small or large, is especially engineered to meet the exact needs

of the individual building and its particular heating, ventilating or air conditioning installation. And only Johnson's *own* full-time engineers and mechanics plan and install Johnson Control Systems. Each installation is made exactly as planned. As a result, Johnson Control is unsurpassed not only for economy, but for accuracy and dependability as well.

FOR OLDER BUILDINGS, TOO

Johnson Control is not limited to new buildings. It can be installed in any existing building, regardless of the type of heating, ventilating or air conditioning system in use.

Why not look further into this matter of automatic temperature control now? Find out how the superior comfort and economy features of Johnson Control can be applied to any or all of the buildings on your campus. An engineer from a nearby Johnson branch office will gladly make recommendations without obligation, or write for more information to Johnson Service Company, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.



Acting as the "automatic brain" of your mechanical equipment, modern Johnson Control makes it possible to provide the desired temperature conditions to satisfy the exact need in each room or area in the building—and do it at the *lowest possible operating cost.*

JOHNSON CONTROL
TEMPERATURE & AIR CONDITIONING

PLANNING • MANUFACTURING • INSTALLING • SINCE 1885